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of
The Kumbakonam College Literary Society.

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EDITORIAL.

In presenting this the first issue of the College Journal for the academic year 1921—22 we welcome our old members who have again come back to the bosom of our college for another year. We extend also our most hearty welcome to the new students and wish them happiness and joy during their stay in the college.

The Journal.

When last year all the societies were amalgamated into the college Union and the Journal was recognised as the organ of the Union, it became in a real sense the College Journal despite the retention of its old name "The Literary Society's Journal" and the sub-editors of the journal the chosen representatives of the students on the Editorial Council became in a manner the accredited spokesmen of the societies of the college and it was only befitting that one of the Sub-Editors Mr. Krishnasami was asked to read the report of the Union on the first College Day.

Contemplated improvements in the Journal.

It is the earnest wish of the Editorial Board to increase as far as possible during the year of their office the serviceableness of the journal to the members and other

constituents. It will be the endeavour of the Editorial Board to improve the journal in the following directions. Attempts will be made to secure more frequent issues of the journal if practicable. The Editorial council will consider whether it would be possible to convert the journal into a quarterly magazine.

Further it is the intention of the Editorial Council that the journal should be the means of introducing the students to periodical literature of all sorts. The most important topics dealt with in the various journals and periodicals available general, literary, scientific and economic will be reviewed in the pages of the journal and the attention of students directed to them. The kind help and willing co-operation of the members of the college staff are earnestly solicited for the proper discharge of this difficult task.

College Activities and the Journal.

A part from the permanent features of every issue of the journal: *i. e.* reviews of the more important topics dealt with in the chief periodicals, we wish that our journal should be a faithful index of our college activities. The prosperity of the journal, its ever increasing interest and usefulness are dependent on the rapid and varied extension of our college activities. Greater interest in the meetings of our societies, more vigorous propogandism on the part of the enthusiasts of our co-operative movement, more discriminating attention to the principles of our athletic activities must necessarily be reflected in the pages of our journal. Certainly our college has been noted for the immense variety of its activities and if each phase will produce thoughts worthy of reflection and publication, there would be no lack of interesting material for the journal. Should not our pride in the manifold activities of our college lead to at least a faint copy of Thomas Hughes: and should we not have a 'Ramaswami at Kumbakonam' similar to a 'Tom Brown at Oxford'? Should not the undoubted and universally admired enthusiasm of our

students for boating lead them to the literature of boat design, materials and construction? Should we nct expect from them an appreciation of the beautiful Cauvery which must necessarily result in beautiful expression? If muse there be in our members, what finer theme can be suggested than the college and its natural surroundings, what more inspiring than the light canoes struggling up the Cauvery against the glowing sunshine? Again if the members of our Co-operative Society look beyond their little concern into the immense possibilities of the movement in our country, would they not be filled with Pentecostal fiire to spread the gospel far and wide? We hope further that the thought inspiring lectures of our classes will rouse the creative instinct in our members and increase the quantity and develop the quality of their contributions.

Extension of College Activities:

Further, we must increase the range of our activities in the college, wide as it is already:

First: *Social Service*: We think that the fine spirit of Social Service that we exhibited during the great Mahamakham Festival must not be allowed to disappear. Our instinct for social service, our impulse to help our fellowmen must not be spasmodic. It must be rendered systematic and must become a second nature with us. Arrangements have been made to keep this league as a permanent and vigorous institution of the college.

Second: *Musical and other performances*: We, students, as His Excellency said at the Pachaiyappa's College, should be optimistic and cheerful. Apart from all that is done by the Principal and the College authorities to make our life in this college pleasant, we need to actively assist them in this task by initiating activities which will keep us in good cheer and cultivate our optimistic temperament Last year, a pleasant feature was introduced in the Hari-Katha performance. Who that witnessed the performance, would not wish that this along with music parties should

orm a permanent feature of our College life? Humourous recitations, rapidly improvised farces, fancy dresses, tableaux, framing and recital of short stories should form features of our extra Collegiate activities. If such are introduced, our journal cannot but be enriched: for out of a dozen farces written and enacted one would certainly be of permanent interest and out of half a dozen short stories framed and recited one should be worthy of reproduction and preservation. We feel certain that there are lecturers who would effectively help us in all such activities. Our intellectual horizon needs to be expanded by a study of the arts and industries of our country. Any interest taken in that direction will fill our columns with very valuable matter.

Immediate Programme for Social Service.

Regarding our first suggestion for the extension of our college activities *i. e.* Social Service, it is recognised by most people who have made any efforts in that direction that the first desideratum is careful investigation of the condition of our poorer classes. Our students need to go to the homes of our poor and study them there. Careful compilation of family budgets has to be made; the percentage of people below the level of 'Primary Poverty' has to be ascertained; the housing of these classes has to be examined and the extent of 'overcrowding' discovered; the extent of drinking, illiteracy and immorality among them has to be sympathetically evaluated and their ultimate causes traced. Under expert guidance which we need not lack, such investigations can be made by our students and contributions made after such investigations to the pages of this journal will decidedly be of permanent interest. Is it too much to ask our students to engage in such philanthropic work?

Commercial and Industrial Education.

Through the columns of this journal, we wish to express another hope. The college passed through a crisis last year: we were asked to consider the education given

in this college as not worth having and we were asked to abandon it. On the whole we made up our mind to continue in the college: we considered the education given in this college was worth having. While the college authorities then have cause for gratification that the general sense of the students has not approved of the condemnation of the education given by them, should they be perfectly complacent and decline to take any warning? Is it not worth while for them to consider whether some commercial and industrial education cannot be attempted at least as an extra collegiate occupation?

Commercial Education.

Naturally and quite imperceptibly, the existence of the College Stationery Society means the training of some of our students in book-keeping, accounting and auditing and commercial correspondence and practice. The annual meeting of the Stationery Society revealed the necessity on the part of every member to know the elements of book-keeping if he is to intelligently follow the affairs of the association and criticise the actions of their elected offiials. We hope that the authorities of the Stationery Society will arrange for the instruction of the members of the Managing Committee in the scientific and detailed technique of co-operative business and members of the general body in the elements of such technique. With the growth of the business of the Society, it will give occupation to larger numbers of our students who will thus receive a thorough commercial education in the most practical manner.

Some directions of Industrial Education:.

While thus the imparting of commercial education has been initiated in the college, should not also some industrial education be introduced? Our Principal is noted for his fine mechanical skill and the construction of a whole fleet of twenty five boats is an unmistakeable testimony to his capacity in that direction. We rejoice that this capacity of his has been appreciated by the Kumbakonam public who

intend entrusting him with the task of constructing a boat for the use of the Town Boat Club. We hope that the Town Boat Club will thrive under his guidance and inspiration, will possess a strong fleet like the college and will enliven our regatta by engaging in friendly races with our college boat club. Regarding industrial education however, what better auspices can be wished for than that of our Principal for inaugurating a new departure in our extra collegiate activities? It appears to us that such extension is very practicable and desirable in two directions:

I. Weaving.

Our town is famous throughout India for the number of its weavers and the excellence of their work. Our Education will be very imperfect indeed if it did not keep in touch with the activities of the town. There are probably many more things that our students can learn from a study of the industries of this town than they fancy. Are they aware of the appliances—the nearly up-to-date appliances--that are in use among the weavers of this town and the possibilities of their extension? Have they heard of the romantic attempts of one of their townsmen to prepare brass-sheets from local waste material? At any rate weaving, which next to agriculture, is the most important human industry, should be thoroughly familiar to our students.

II. Cabinet-making.

Of the several industries, the most practicable one for introduction in the college, is, in our opinion carpentry and cabinet making. No man can find an elementary knowledge of carpentry superflous in life and certainly there are facilities for its introduction in our college.

Industrial Education and Educational Theory.

May we draw the attention of our members to the fact that the latest Educational theorists tend towards

elevating art and industry to a central position in a scheme of liberal education? They are not considered mere bread winning studies but the sources of high liberal culture. The names of Prof. Dewey of the United States of America and of Prof. Kerschensteiner of Munich are universally known and respected. Despite radical differences between the two due to differences in national temperament, both have arrived at converting national schools practically into national workshops. In Manchester again the centre in England of an up-to-date Uuiversity and up-to-date educational institutions, such an attempt has proceeded far; and the close connection existing in the educational institutions of that town between study and work can be read in the pages of Legge's 'The Thinking hand'. So in advocating the introduction of an industrial phase to our college activities, we are in no sense advocating a new fangled notion but a notion absolutely in consonance with the most recent and advanced educational theory and practice. We feel sure that once such activities are given a fair start, they will grow and expand until the Kumbaconam College will give students a broadened culture and a highly sympathetic outlook. Certainly the bread winning capacity of our students will increase and there is no reason why we should shed tears over it: their life will be happier and richer. But what appeals to us, even more than the increased bread winning capacity that will be created, is the greater connection that must arise from such activities between the cultured graduates of our college and the working classes of our country. It is this moral effect that is particularly appealing to us; and we pray that this suggestion of ours may go straight home into the minds of the members of the lecturing staff. Book-binding and tailoring are natural accompaniments of our Stationery Society. But everything depends on the outlook; and it is a change of outlook that we plead for.

The Hostel Labour Corps.

In this connection, we wish to congratulate the Hostel labouring corps of last year on the excellent example they have set and trust that under the sympathetic guidance of the sub-warden the present year students will continue the worthy example set. As Editors of the journal, we wish however to exhort the members of the corps that they should not only learn to respect the dignity of manual labour by working on the field with their own hands but study the sciences of gardening and agriculture and try and arrive at generalisations and results worthy of publication. We feel sure that if the labour corps sets to work with that definite aim, the members will be able to give us notes on gardening which will be informing to the general public.

Conclusion.

Our Editorial has already run to an inordinate length. We close with hearty good wishes to our members and hope to be of increasing service to them. But our capacity to so serve them depends on their activities, their faculty to generalise from their activities and give them a permanent expression. May we hope that the college activities will be ever expanding and our students will take such an abiding interest in them that their literary capacity will be roused thereby.

[Since writing this Editorial we are gratified to note that some of the suggestions-such as reorganising the College Volunteer Corps for rendering effective Social Service and a beginning towards imparting instruction in elementary Book-keeping, etc., are being carried out by our kind and sympathetic Principal.—K]

PLATONISM IN SPENSER.

The influence of Plato, the great Greek philosopher of the pre-middle Ages, is clearly seen in almost all the works of Spenser. Spenser must have learnt a good deal about Plato and his works, at Cambridge. where the famous school of Neo-Platonists or Cambridge Platonists had been established He must further have been affected by Bruno, a contemporary of his and a great authority on Neo-Platonism and especially by his Latin translation of Plato's works published by about that time. The foundations of Spenser's imaginative thought were laid in Platonic philosophy; and when his genius expanded he again looked to Plato for his instrument of poetic expression, illustrating Plato's abstract doctrines by concrete myths.

To understand clearly the influences of Platonic thought, a knowledge of Plato's doctrine of ideas and his philosophy of Nature is essential. The universe is conceived by Plato as a logical system of ideas; it forms an organic spiritual unity, governed by a universal purpose, the idea of the good, and is therefore a rational moral whole. The idea or concept holds together the essential qualities common to many particulars: the essence of things consists in their necessary *form*. We are apt to consider such ideas as mental processes only. For we see a horse, but horseness we do not see. It is only in the mind we conceive of an idea or type of a horse. Plato did not share this view; according to him the ideas or forms are not mere thoughts in the minds of men or even in the mind of God; he conceives them as existing in and for themselves, having the character of substantiality. He even goes further and says that "they are the original eternal transcendant archetypes of things in the world of our sense perception. They exist prior to them, are independent of them and uninfluenced by changes to which these latter are subject. The particular objects which we perceive are

imperfect copies or reflections of these eternal patterns; particulars may come and perish, but the *idea* or form remains the same. Men may come and men may go, but the man-type, the human race goes on for ever. There are many objects or copies but there is *one* idea of a class of things. There are numberless such ideas nothing being so low or insignificant as not to have its idea. These ideas are archetypes, though numberless are not disordered; they constitute a wellordered world or rational cosmos forming an interrelated, connected organic unity, being arranged in logical order. There are thus two worlds—the *ideal* world and the *socalled* real world or the world of our sense perception. The one is perfect and the other imperfect, due to the attempt of mind to give form to inert dead matter.

In fact Nature owes its existence to the influence of the ideal world on non-being or matter; as a ray of light passing thro' a prism is broken into many rays, so the idea is broken into many objects by matter. The formless something is non-being—in the sense of having a lower order of existence; Our world of sense perception partakes of a measure of reality or being in so far as it takes on form. In further developing the relation between this ideal world and the so-called real world Plato unconsciously expatiates upon the relation between mind and matter.

The fundamental point in Platonic philosophy which influenced the 16th and 17th century writers in general and Spenser in particular was the reality of the spiritual or Heavenly beauty

"And on the grass her dainty limbs did lay
In secret shadow, far-from all men's sight;
From her fairhead her fillet she undight,
And laid her stole aside. Her angel's face,
As the great eye of Heaven shined bright,
And made a sunshine in the shady place;
Did never mortal eye behold such heavenly grace."

This shows the poet's sense of ideal beauty. With this is contrasted the physical or Earthly beauty. Thus in Spenser's Fairie Queene B. K. I, Holiness means that state of the soul in which truth is recognised and admired. Una is wisdom and Spenser lays constant stress on her beauty. [Bk. I Canto IV St. 5 and Canto VI St. 9.] In Book II also the same platonic traces are to be found. Here true chastity is conceived by Spenser as the Platonic progress from love of beautiful objects to love of moral ideas.

In the 'Hymns to Earthly love and beauty' Spenser uses Plato's theory to provide a philosophic cause for the feeling of love and beauty. In the 'Hymn in honour of love' it is declared that love is the manifestation in man of the great creative power which produced the world out of chaos by causing a harmony of the elements. In the "Hymn to beauty" Spenser combines the older conception that the world springs from God and therefore is full of His beauty, with the idea of Plato that the Creator made everything after an ideal pattern in Heaven. Spenser deals with the same subject in "Colin clout" also. In the 'Hymn of heavenly love' Spenser combines the Christian idea that God is Love with Plato's that love is the desire to give birth to beauty. God therefore created the world from an impulse of love and a desire to create beauty (Lines 32—42; 53—59; 116—122). In "Hymn to heavenly beauty" he takes from Plato the idea of heavenly love as the love of the *soul for spiritual beauty*. Thus according to Spenser heavenly love is felt in our soul when we realize how beautiful wisdom is.

The seventh book of the Fairie Queene embodies Spenser's philosophy of change. All things change towards decay. Fortunes of men, of Empires and Dynasties, scenes of Nature are never the same for any length of time. The rich becoming poor and the poor amassing wealth, the shattering to pieces of Empires within man's memory the emerging of new and fresh islands in the ocean and the

submerging of plains under water are not uncommon. Thus change is essentially a characteristic feature of all things in the Universe. Similarly in the inner world of man's soul the same law of change holds good in as much as his feelings, thoughts, aspirations and his outlook on life undergo a change corresponding to the accumulation of his experience in life. In fact the life history of a man is but the chronicle of the changes that he experienced. Spenser asks "What then is the cause of all this change" and replies that by change they "worke their owne perfection so by fate" Change is thus according to him, a necessary process for the perfection of things in the universe. Like Plato he holds that in the mind of the Creator, there is a divine 'idea' or 'concept' or ideal which is the ultimate goal of everything in the universe. The objects which we call beautiful, the heroes that we set up and adore and the actions which we call just are all but shadows of the divine ideal of beauty heroism and justice. [Man's soul in the same sense is but a shadow of the ideal soul.] In the present phenomenal existence we are remote from that ideal and are swayed by change this side and that until we are restored to that ideal of perfection which is in God's mind. And when this perfection is reached there will be no further change.

"Then over them change doth not rule and reign
But they reign over change and do their states maintain".

There is thus only an apparent change. Here Spenser's philosophy is that of a theist who believes in a well designed universe ruled by a rational intelligent being; and it is meant to be an answer to the usual argument of a sceptic who has no faith in any such agency and holds that all change is purposeless tending towards decay.

K. KRISHNASWAMI.

MATHEW ARNOLD.

Mr. Taine remarks that every art ends in a science and every poetry in a philosophy. M. Arnold also says in one of his essays that a period of genuine creative activity in literature is generally followed by criticism. The history of English literature well bears out the truth of these statements. Chaucer's age was followed by the fifteenth century, which, comparatively barren in poetry, was tolerably active in prose; the glorious outburst of the Elizabathen Era was succeeded by the correct classical and critical school of Dryden and Pope. It is then but natural that the peculiarly rich, but not so strongly active, romantic literature of the first quarter of the last century should be followed by a time of criticism. The old spontaneous expression in song of the soul-stirring fulness of the heart's emotion and the mind's enlightenment is gone; people want to follow in the wake of the masters, but the attempt is out of season, and the atmosphere which nourished the poetic temperament of the masters is not there to do a similiar service to the aspirant artists. In M. Arnold's language, the current of genuine and fresh ideas is wanting to these young poets. And so the art of Wordsworth and Shelley and Keats has ended in the science of criticism and the romantic poetry of the opening years of the present century has ended in the philosophy of rational and moderate culture. There is one special difference which may well be noted between the critical philosophy that followed the age of Shakespeare and that which followed the age of Wordsworth. The critical spirit was then excited and brought to the front by the inordinate extravagences of the postShakespearean writers; in the present age, criticism is invoked not so much by the very many elements into which the intellectual energy of the Victorians has to be directed.

It is not a very difficult task for us to see that the Victorian poets and other writers represent the England of

the late Queen's reign. But one noticeable feature in this representation is that it is partial; every writer seems to emphasise in his representation one or other particular aspect of English life; but none the less, other aspects are also touched, and the representation is not one-sided. Tennyson is one of such writers. He touches many aspects of English life and his poems give descriptions of many kinds of English activity in the last century. Social roblems, methods of reform, definition and scope of freedom, rights of men and women, science, its limitations and its uses and many other things are incidentally and poetically treated by him. Purely on the poetic side it is sufficient to refer to his love for and faithful depiction of, natural scenery.

Robert Browning is another poet whose writings reflect his age. Not a versatile poet like Tennyson, he makes up for this want of versatality by emphatically insisting on the moral and philophical side of man's nature. His doctrine of moral progress and persevering improvement onwards from good to better and from better to still better till at last the happy best is reached is a living force in modern English literature. His high ideal of Love and its practical illustration in his relations with Miss Elizabath Barret is another legacy which he has left to the moderns.

Turning from the poets to the prose-writers, we find the same representative quality as their common characteristic. Carlyle—that eccentric sage of Chelsea, is the truest and most vigorous representative of the short comings of his age, of which his contemporaries were only half-conscious, till his unsparing, trumpet voice woke them into a forcible recognition of them. His representation of his age also is many sided like Tennyson's; although most of his work was done as a prose-writer, essayist, or an historian.

Many other men of letters of the Victorian era represent the numerous movements that filled the long reign of the late queen. Mathew Arnold's work—both in

prose or poetry,—takes a very high rank in Victorian Literature. His prose is the standard prose of the present day; his criticism is the model upon which modern criticism of any literary or lasting value is based. Although Arnold's poetry is lasting, immortal, whereas his prose teachings have passed into business of standard culture and have lost their novelty and the charm of their originality, yet it is a fact worthy of notice that it was chiefly through his prose-work that Arnold did the greatest service to the England of his day and to posterity. But Arnold stands a worthy colleague of Jhon Ruskin in bringing about social reform though prose. And it is not too much to say that the present culture of Englishmen is due, to a considerable extent, to the influence of the teachings of these moralists. The first thing that M. Arnold protested against in the English character, was self-satisfaction. He further held that to be dissatisfied with our present attainments and all have a just reason to be dissatisfied with their poor achievements in life—was a constant stimulus to improve. In intellectual matters, Arnold's criticism is very vigorous and original. He defined criticism as the disinterested endeavour to learn and propagate the best that is known and thought in the world.

The next department of M. Arnold's activity is his poetical work. It is considerable and very choice. The political, intellectual and social disturbances amid which the best part of his life was passed, all have left a lasting impression on his poetry. It is admitted on all hands that, on the whole, his works justify his claim to a rank among the best of modern poets; and it is due chiefly to the austerity of his poetry and to the fact that it comprises a critical treatment of many problems that are of perennial interest in human philosophy. His wild scepticism and disregard of established customs merely as such, found characteristic expression in his 'Empedocles on Ætna'. The poet philosopher, Empedocles, finding himself in capable of taking any part in the activity of his age, leaps

into the creator of Etna, after making a speech which is characteristic of Arnold's theories and philosophy of human life. Among the moderns, as in criticism, so in practice, Goethe was his model. His sanity of judgment and tranquil subjects of special praise with Arnold.

He says that Goethe

pursued a lonely road,
His eyes on Nature's plan;
Neither made man too much a God,
Nor God too much a man.'

Of his lyrical poems, the 'Forsaken Merman' is justly the most celebrated. Its imaginative power rises to the same level as that of the 'Church of Brow,' and its lovely pathos, so human and still seemingly so mysterious and superhuman belonging almost to the region of mythology, is its chief charm and special characteristic. His creative power is almost at its best in this short poem.

Of his narrative poems, "Balder dead," and "Sohrab and Rustum" are all beautifully executed. In this last named there are really some charming similes quite in Arnold's manner. For example—

His soul to grief, as the vast tide
Of the bright rocking ocean sets to shore
At the full moon;
Sohrab lying on the sand,
Like some rich hyacinth—
—a fragrant tower of purple bloom
On the mown, dying grass;

and the blood running down Sohrab's sides out of his wounds.

Like the soli'd tissue of white violets,
Left, freshly gathered, on their nature bank,
By children whom their nurses call with haste
Indoors from the sun's eye.

In the end it will not be inappropriate to say that with all his limitations and minor short comings, Arnold's poetry is a great influence in Modern English literature and its 'sweet gravity and calm, majestic pains of the conquest of Death' and Despair, strengthen and in a delightful way cultivate the taste and natural instincts of the reader.

C. L. ARAVAMUDHAN, II Class

The above is the abstract of an Essay read in 1912, in Allahabad by Mr. Tagen[illegible] Lal M. A.

THE ANTIQUITIES OF MAMALLAPURAM.

Mamallapuram popularly known as Mavalevaram, called the 'Seven Pagodas' by Europeans, is a village about 20 miles east—south-east of Chingleput. On the way about 10 miles from Chingleput lies Thirukkalukunram which is a place of much religious importance. There, on the summit of a hill of about 500 feet in height there is a temple called Vedagirisvara temple. In it, a Pandaram feeds daily two vultures with sugar-seasoned rice and ghee. On the way down from the hill there is a small cave cut by Mahendravarman I. In the village itself there is another Siva shrine which dates from the ninth century A. C. This shrine contains many inscriptions which are of much historical value.

The journey from Chingleput to Mamallapuram is a pleasant one. Mamallapuram lies in a narrow strip of land between the Buckingham canal and the sea At present it is a small hamlet of no consequence with a few houses. The modern name of the village is Mahabalipuram, the city of Mahabali, the great Emperor of the Asuras who was kicked into the nether world by the great God Vishnu. There is a panel of Trivikrama in the Varahavatara cave, the only monument that would justify the assooiation of this place with the Demon-Emperor Bali.

In Tamil literature the place is known as Kadalmallai and Talasayanam ([1]) whereas in the accounts of the Greek-travellers [2]) as Malange, which is properly a corrupted form of Mavilangai * It was a seaport of much importance in those times. Broken vessels, ruined walls and Roman, Persian and Chinese coins were discovered there recently. One of them was the coin of Theodosius of date 371—395, which would indicate that the place was a port of some commercial importance.

1 The poem of Periya Tirumoli and some inscriptions.

2 Indian Art Vol. XIII p. 333 and 363 and W. Schoff's Periplus p. 45 section 60.

* For a description of Mavilangai see Sirupanarrupadai.

Hiuen Tsiang says that (3) "The city of Kanchipuram is situated on the mouth (bay) of the Southern sea of India, looking towards the kingdom of Simhala, distant from it three day's voyage." The description of Talasayanam by Tirumangai Alwar is as follows :—

"O! my foolish mind, circumambulate in reverence those who have the strength of mind to go round the holy Talasayanam, which is Kadalmallai in the harbour of which, ride at anchor, vessels bent to the point of breaking laden as they are with wealth, rich as one's wishes, turned big elephants and the nine gems in heaps."(4)

Thus the city of Kanchipura, referred to above, can be no other than the port of Kanchipura in all likelihood Mamallapuram. This is further corroborated by the Mahavamsa, when it says about the arrival of the two Buddhist Divines Bodimeghesvara and Abhayadamstra because of a revolution in Ceylon and the departure of Manavamma from South India for the second time (5)

Thus Mamallapuram was the capital of the Pallava dominion about 640 A. C. the date of Hiuen Tsang's visit to India. At that time the Pallava King was Narasimhavarman I Surnamed Mamalla the destroyer of Vatapi. There we find many insciptions of Narasimha and we have not even a single inscription of his in any other place. All the caves and sculptures at Mamallapuram were begun by him and continued by Paramesvaravarman I. Thus it appears that the present name owes its origin to Mamalla and in those days that city was called Mamallapuram, the city of Mamalla.

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3 Beal's Life and Travels Hiven Tsiang p. 139. See also Watter's Yuvanchwang Vol. II p 227 which says "Kanchipuram" is the sea port of South India for Ceylon, the voyage to which takes 3 days".

4 புலன்கொள்நிதிக் குவையோடு புழைக்கைம்மா களிற்றினமும்
நலங்கொள்நவ மணிக்குவையும் சுமந்தெங்கும் நான்றொசிந்து
கலங்களியங்கும் மல்லைக்கடன் மல்லைத்தலசயனம்
வலங்கொள் மனத்தாரவரை வலங்கொள்ளென் மடநெஞ்சே.

5 Mahavamsa, Turnow and Wijesimha Ch. XLVII.

Narasimhavarman I laboured to make the caves Siva-shrines and make the place a Siva centre. The sculptures of Mamallapuram can be divided into four classes.

1. Monolithic rock-cut shrines.
2. Excavations in the shape of caves of various kinds.
3. Sculptured rocks.
4. Structural buildings, such as temples

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1. THE MONOLITHIC ROCK-CUT SHRINES.

Of the monolithic rock cut shrines Mamallapuram contains about ten; five, now known as Pancha Pandava Rathas, at a distance of half-a-mile from the village, one, Ganesa Ratha situated to the north-west of the modern Vishnu shrine and the rest known as Pidari Rathas north-west of the Traveller's Bangalow by the side of the Buckingham canal.

Of the Pancha Pandava Rathas, each differs in structure from the rest except the one known as Arjuna's Ratha which coincides in structure with the Dharma Raja's Ratha. The smallest of them all, known as Droupadi's Ratha is of the pattern of a Parnasala a small hut with roof overlaid with paddy-grass as huts often are. The roof of the Ratha exhibits even the details of the overlying paddy grass. Each corner of the roof is ornamented with a *makara* (a fabulous Hindu animal) with its face turned upward The temple is dedicated to Parvati and her image is sculptured on the wall of the shrine. This is the first temple dedicated to Parvati we know of in the Pallava epoch. The dvarapalas of this shrine are females.

South of this, is situated Arjuna Ratha. The roof of this Ratha as well as that of Dharmaraja Ratha is conical. There is no image in the sanctuary. But from the sculptures on the walls we learn that the temple was dedicated to Siva.

The Dharma Raja's Ratha just like Arjuna's instructure is however higher and contains three stories whereas Arjuna's contains only one story. It is sculptured on all sides with the images of our Gods. But it is not yet finished

The Bhima Ratha is of a different pattern the ap-idal. The roofing is an imitation of that of the local village huts: i e. plaited c coanut leaves overlaid in more substantial dwellings by dried paddy grass. Such a building necessitates certain stuctural features in the roof, which in the copies develop into ornaments. The Bhima Ratha is cracked in the centre and only recently the Government has repaired the structures and patched up the cracked portions. It is not complete and we are unable to say to whom this Ratha was dedicated.

The above four Rathas are in one line facing west. But the fifth known as Sahadeva Ratha is detached from them and faces south. It is of another pattern that which Mr. T A. Gopinatha Rao has named Gajaprishthakriti shape (6) There is in fact a statue of an elephant by the side of this Ratha which also faces south. Dr Dubreint draws attention to the similarity in shape between the Elephant and the Ratha thus :—" The stone elephant found in the midst of the Rathas of Mahabalipuram is placed close to Sahadeva Ratha in such a manner that it would appear that the Pallava sculptors of Mahabalipuram wanted to draw the attention of the on lookers to the elephantine form of the Ratha." (7) The sanctuary of this shrine has also no image.

Besides this elephant there are statues of a lion which faces north and of a Nandi which faces west. The sculptures are not complete.

Ganesa Ratha follows in every respect the Bhima Ratha. There is a popular story that it was once dedicated, but the lingam was damaged and so replaced by the image of Ganesa.

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6 Five Bana inscriptions at Gudimallam Indian Ant 1911.

7 Dr. Dubrewils Pallava Antiquities Vol. II p. 20.

2. EXCAVATIONS.

Among the excavations those that deserve the most special study are the (a) Trivikrama cave, (b) the Varaha cave, (c) the Mahishasuramardani caves, and (d) the Trimurthi cave.

(a) The *Trivikrama* cave is situated a little to the south of the Ganesa Ratha In that cave there are four bas reliefs representing (i) Trivkirama (ii) Bhuvaraha (iii) Lakshmi rising from the milk ocean and (iv) Durga.

I Trivikrama is sculptured on the south wall facing north with the left foot raised to the level of the forehead representing Trivikrama striding over the heaven world. He has eight hands. Three of the right hands carry chakra, gada or club, and katga or sword: The fourth hand is held up with the palm turned upwards representing Him as holding the heaven world. Three of the left hands carry sankha, ketaka or shield and Danus: the fourth is stretched out parallel to the uplifted left leg. Near the foot of that leg is seated Brahma on a Padmasana offering *puja* to the foot with one of his hands. His image is given four hands and is made to wear the *jata makuta* and *karna kundalas*. In the corresponding position to the right, Siva is seen seated on a Padmasana. His image also has four hands: one of which is held in the pose of praise. Immediately below Siva, is Surya with a halo whereas on the other side is seen Chandra. The way in which their legs are worked out suggests that they are both residing up in the heavenly world without any terrestrial support. The heaven-world which Trivikrama is striding is above them. They both have only two hands both of which are stretched out in the act of praising Him. Behind the head of Trivikrama is seen Jambuvan sounding a drum, called *Bheri* in joy for the victory of the Devas over the Dhanavas. Near him is also seen Kalpaka, the celestial tree. At the foot of Trivikrama sits Namuchi to the right ;

and there are three other figures, perhaps Bali and some other prominent asuras There is one more figure shown as if cutting somersaults in the air and carrying something like a staff in the right hand This figure is perhaps one of the Dhanavas so tossed up into the air as if by a hurricane when Trivikrama grew to a gigantic size.

ii On the opposite panel facing south is the relief of *Bhuvaraha* with the right leg raised and bent and resting upon the jewelled hood of the serpent, Adisesha. It has four hands two of which hold Sankha and Chakra. Of the remaining two hands the left is shown as supporting the legs of Bhumidevi, seated on the God's bent right leg, with her own legs hanging down, while the right is thrown round the waist of the Goddess as if supporting her firmly. The associated figure of Bhumidevi has only two hands which are held in the Anjali attitude. Her face expressive of joy and shyness is slightly bent down and turned towards her lord. The boar face of the God is slightly lifted up so as to make the muzzle approach the bosom of the goddess as though he is engaged in smelling her. (This is a characteristic feature of the boar. This attitude of amorous dalliance is most remarkable.) Above him there are the figures of Surya and Chandra. There are also the figures of two attendants.

iii. The other two reliefs are sculptured by the side of the shrine there which has no image in it. In the north is the image of "*Lakshmi rising from the milk ocean*" just like the one we have seen above and some dvarapalas.

At Mamallapuram there are two *Mahishasuramardani caves*, (A) one near the Light House and (B) the other near 'The Shore Temple.' (A) The one near the Light house has two reliefs representing i. Mahishasuramardani and ii. Narayana-sthalasayana. i. The former panel represents the final combat between Chandi and Mahishasura. The Goddess Durga is represented with eight hands, seated on the back of a lion. She has high breasts and a

thin waist and there are three bends in her body (Thribanga). Her two natural hands hold the bow and arrow whereas others hold sword, shield, Trisula, Sankha, and Chakra. By her side there are about eight dwarfs bearing arms and one of them is holding an umbrella over her head. In front of her, Mahishasura is represented with a club. There is an umbrella over his head. Between the goddess and the asura there is the figure of a man falling with his head down. Underneath his head there is the figure of a woman holding a sword so that it might sever his head when he falls down.

ii. Narayana-sthalasayana represents Vishnu *en couchant*. About one fourth of the body is somewhat raised and the remaining three fourths lying flat upon the serpent bed. It has only two hands; the right placed near the pillow so as to touch the *Krita* and the left bent at the elbow representing the *Kataka* pose. The right leg stretched out whereas the left is slightly bent. Below this recumbent there are three images; two of them are perhaps Brigu and Markhandeya. Near the feet are seen Madhu and Kaitabha with their clubs Above the level of the Vishnu image there are two sculptures probably Vishvaksena and a Pujakamuni. There is a sanctury which has no image in it and the figures of the Dvarapalas have been erased probably only recently by some Vandals.

(B) The other near 'the Shore Temple' has only a sanctuary without the verandah before it as in the cave at Kilamavilangai. There Durga is not represented as fighting with the asura as in the above cave. By the right side, in the rock is sculptured the figure of a lion giving blows to and killing the demon Mahishasura. But since the sea is at the foot of the cave, the sculptures are worn out.

(d.) The Trimurti cave is situated to the north of the Ganesa Ratha. There are the images of Brahma, Siva, Vishnu, and Chandi. There the images are sculptured on the back walls of the shrines. There the Siva shrine is the

most important one for the other shrines are dug a little back to the Siva shrine which is in the middle. On the two sides of this shrine are the shrines of Brahma and Vishnu. Dr. Dubreuil is of opinion that the image now going under the name of Brahma is Subramanya (8). But we do not find any image of Subramanya sculptured during the Pallava epoch except those found in the sculptures of 'Somaskhanda' In almost all the caves of Pallava origin we find the images of Brahma and Vishnu on the two sides of the Siva shrines so, that image most probably represents Brahma. In the southern end is the image of Chandi. It is not sculptured in a cave, but in a niche. She is standing with four hands of which two hold sankha and chakra on the head of a buffalo thus representing Mahishasuramardani.

Apart from these, Mamallapuram contains some twenty caves which are not yet finished, and the figures of the dvarapalas (if these contained any) had been erased. Thus they are not of much importance.

3. SCULPTURED ROCKS.

At Mamallapuram there are three sculptured rocks: A and B. two of which have been traditionally held to represent "Arjuna's Penance" and C. the third "Krishna lifting up the Govardhana mountain."

Of the two former bas reliefs one is near the modern Vishnu shrine 'Sthalasayanaswami Temple and the other near the Light-house.

A and B Arjuna's Penance :—

In each of them the sculptor has made use of a whole piece of rock with a crevice right in the middle. The striking feature of the whole scene appears to be the crevice towards which every figure represented seems to be turned. Left of the crevice there is a figure of an old man standing on the left leg, the right raised and bent, and

8. Dr. Dubreils' Archae'ologie du sud de e'Tome I p 84 and Tome II p. 49 pl. XVIII A.

both his hands held above his head in an attitude of severe penance. In front of this old man is seen the majestic figure of God Siva giving an ear apparently to his prayers. In the rock near the modern Vishnu shrine there is a small shrine, below the penitent, containing a standing image. Just outside the shrine an old man is found seated in the attitude of one performing *japa*.

The sculptures though, as has been said traditionally, held to represent Arjuna's penance do not faithfully portray that incident. Recently Dr. Dubreuil (9) pointed out,

1. That the principal object in the scene is the vertical crevice in the rock, for, it is towards it that all the personages are turned.

2. That the presence of nagas in the crevice proves the presence of water. He therefore concluded that the incident portrayed was 'Bagiratha's Penance' and not 'Arjuna's Penance'.

But in 1917 Prof. S. Krishnaswamy Iyengar defended the tradition (10) that it is Arjuna's penance. He argues that the trend of the various figures towards the middle is not because of the water course there, but because of the chief character Siva being there and says that the water-course is merely incidental and cannot be held to represent the coming of the Ganges. "The story of the coming of the Ganga, so far as it relates to this particular, requires that Ganga should be shown as descending upon the matted coiffure of Siva getting there almost, issuing therefrom in a small stream by means of a loosened lockt The aspect of Siva has nothing in it to indicate this."

From the narrative of Arjuna's penance in the Mahabarata it will be clear that the characteristic inciden. of the story is the combat between Siva and Partha. This bas relief does not seem anywhere to represent this.

9 Pallava Antiquities Vol. I p. 64 and Asiatic Journal th 11 series Vol. IV, July—August 1914.

10 Indian Art Vol. XLVI.

On the other hand, of the four sides of a pillar unearthed in 1911 at Chandiman in the Bihar District of the Patna division exhibiting Arjuna's penance, one is devoted to this combat. ([11]) The sculptures again which Mr Krishnaswamy Iyangar says, represent the chase exhibit no symptoms of the heat and strife of a chase. One of the hunters has his hand raised to his head as a sign of adoration.

Again from the story we learn that Partha was not performing a penance then, for as soon as he heard the coming of the boar he took his bow Ghandiva and aimed an arrow at the boar. But in the sculptures we see the penitent doing a penance so intense that he does not notice Siva Himself who appeared before him Hence the sculptures do not seem to represent the main incidents in the narrative of the Mahabharata.

Mr. Iyengar further says that the boar whose figure is represented in a corner there is the victim of the chase. It is represented in an obscure corner and only the head is seen We see also a deer galloping just at the foot of Siva and the figures of many wild beasts, the lion, tiger, monkey, elephants etc. It appears more probable therefore that the sculptor has taken great pains to represent a forest scene. Thus we find that it is unlikely that these reliefs represent Arjuna's penance.

In the story of Bhagiratha the characteristic incident is the coming of the Ganges. In the sculpture, as we have already said, the crevice forms the important portion Mr. Iyengar argues that the trend of the various figures towards the middle is not because of the water course there, but because of the chief character Siva being there. But we find the images between the crevice and the Siva turning towards the crevice and not towards Siva. In the relief near the light house, we see Siva at one end of the rock and the sculptured figures facing towards the crevice.

11 Annual report of Archaeological survey for 1911.

They also have their hands raised to their heads as a sign of adoration. It will be seen by the selection of rocks with crevices in the middle from a group of rocks, that the crevice was not incidental but intended to be the very centre of the reliefs.

The presence of the nagas in the crevice shows the presence of water. We also find the figures of Bavans and water-fowls near the nagas on both sides. During the Pallava epoch rain water flowed through the crevice and the passage was only recently blocked by the Departmental authorities. Thus we find Mr. Iyengar's argument that the water course is merely incidental and cannot be held to represent the coming of the Ganges is not correct.

In one of my visits to Mamallapuram I saw four sculptures in the lowest row which seems so absolutely devine: (a) One of the images is the figure of a sage (whose face is just like that of the man before whom Siva appears) in a standing posture with his hands raised above his head just like the penitent before whom Siva appears, and his head slightly tilted above towards the crevice which shows that he is eagerly waiting from above the crevice. (b) Next to this is an image just like the first, but represented sideways with his face turned to the crevice. He i bowing low so that his chin is in contact with his breast. (c) Then there is a figure of an individual holding a pot on his left shoulder with his left hand. It has a majestic appearance. (d) Lastly there is the figure of an individual holding a loosened lock with both his hands. His right hand holds it near his head whereas his left hand near the waist. The lock hangs on his right side. This is also majestic in appearance and is certainly Siva. It represents Siva letting out the Ganges in a small stream by means of a loosened lock of His These taken together represent the descent of the Ganges (Gangavatarana).

Thus the whole story of Bhagiratha's penance is exhibited in three tableaux The middle part exhibits

Bagiratha's penance 2. The upper represents Siva appearing before him and agreeing to bear Ganga. 3. The third or the lower is Ganga descending down, Bagiratha standing expecting the descent praying to Siva to let her out and Siva letting her out by a loosened lock.

We also find the sculpture Gangavatarara in a cave in a rock at Trichinopoly which was cut by Mahendraverman I the father of Narasimhavarman I who began the works at Mamallapuram. It shows that Gangavatarana was considered as a representation of one of Siva's many acts of beneficence to humanity.

Thus the merit of having given a satisfactory explanation of the scene and cleared doubts regarding its meaning goes to D.Dubreuil ([12]) who has proved that the personage who has so long been mistaken for '*Arjuna*' is no other than '*Bhagiratha*' aud this grand sight must be called not '*Arjunas penance*' but '*Bhagiratha's penance*'.

C. The sculpture of *Govardhana Krishna* is a little to the south of 'Bhagiratha's penance'. There are sculptures besides cows some wild animals also. They are all very excellent from an artistic point of view. One will notice the young Krishna playing on the flute. This refutes the theory that Venugopala is not found representated before 13th century A. C. Of the twenty stanzas of Thirumangai Alwar devoted to this place one seems specially to refer to this relief.

Of the minor reliefs those that deserve notice is the 'Lion throne' and the 'elephant'. By the side of the latter are sculptured peacock and a monkey. The Lion throne is a small platform with a lion seated at one end of the platform.

4. STRUCTURAL TEMPLES.

Of the structural temples there are four, 1. the first situated in the north of the village is unimportant; 2. the

12. I am indebted to Dr. Dubreuil for interpreting the original French article in Asiatic Journal where it is clear that it is Dr. Dubreuil who first suggested this to Mr. Victor Gulleben.

second is built near the light house on the top of a rock in which the Durga cave is excavated ; 3. the third which is at the sea-side is known as 'The Shore Temple'; and 4. the fourth the Sthalasayanaswami Temple, the modern Vishnu shrine is situated in the middle of the village.

The Olakkannesvaraswami Temple and the "Shore Temple' belong to the style of Rajasimha and the modern Vishnu shrine to the Vijayanagaram art. The former temple was used for a time as the Light house. The authorities have blocked the sanctuary with the steps that go up and so there is no image there. The walls are adorned with beautiful figures of which one represents Ravana shaking the 'Kailasa mountain'.

The Shore Temple in general view shows a double vimana, both parts shaped exactly alike, but of proportions that seem intended to serve the purpose of shutting off the smaller shrine from view on one side. The shoreward tower is the smaller and seems the older.. It has a hole in the middle of the pedestal stone to hold a stone image or *linga*. An image has since been recovered of the *Sarvatobhvdra type i. e.* A coloumn with four faces, each face with a head of Siva. The top is also surmounted with a head. There is within the shrine a representation of Siva as Somaskanda in the central panel.

Beginning at the south end of this little shrine and at tne back of it looking towards the sea is what now looks a comparatively dark chamba, holding a large-sized image of Vishnu *en couchant*. This Vishnu has been described as "Vishnu in the company of Siva whose proper place is crematorium."(13)

Then comes the sea-ward shrine just covering this in front, and of proportions to shut off altogether from view

13 பிணங்களிடு காடதனுள் நடமாடு பிஞ்ஞகனோடு
இணங்கு திருச்சக்கரத்தெம்பெருமானார்க் கிடம்விசும்பில்
கணங்களியங்கும்மல்லைக் கடன்மல்லைத் தலசயனம்
வணங்கு மனத்தாரவரை வணங்கென்றன் மடநெஞ்சே.
(Periya Tirumoli II VII 9)

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on the sea-side both the Vishnu and the Siva shrines described above. This contains a huge granite lingam with sixteen fluted faces which is a characteristic feature of the style of Rajasimha. In the back wall there is a representation of Somaskandha which is extremely beautiful. But the sea breeze has worn all the images in the temple except the linga mentioned just now, for it is of granite which would not yield to the sea-breeze easily. The richers are adorned with a kind of ornament called 'single arched Tiruvatchi'. The Chola inscriptions found at Mamallapuram (14) go to prove the existence of the three shrines. (1) Jalasayana or Kshatriyasimha Pallavesvaram (2) Pallikondarulivadeva (3) Rajasimhapallavesvaram. The modern Vishnu shrine is perhaps intended to replace the Vishnu shrine near the sea. It seems that the building was planned on a large scale. The western gopuram is on a hill and now known as western Rayala gopuram. On the whole, it appears that the length of the temple proposed was about 2 furlongs; but the present length of the shrine is only $\frac{1}{4}$ of it. The God and Goddesses are known as Sthalasayana Perumal and Neelamangaithayar (Bhumidevi) respectively. Here Vishnu is represented just like the one we have near the sea and the tradition goes on to say that Vishu wanted to show Himself to a Rishi in the Yogasayanamurthi form. The name Bhumidevi appears to be a later one connected with the Varahavatara panels. In front of this temple there is a mantapam resting on four pillars of 24 feet each. This deserves a special study as this is a type of the vimanam in the Vijayanagaram art.

Apart from these sculptures there is a huge block of stone resting on a small space of 2 feet. It is now known as 'Krishna's Butter Ball'.

SOCIAL LIFE IN THE PALLAVA PERIOD.

Apart from the architectural and sculptural points of view the remains at Mamallapuram are very important

14 South Indian Inscriptions Vol I.

because the social and economic conditions of the Pallava Empire during the 7th century can be gleaned from them. From them we learn that at that time men and women were well built and handsome. Hieun Tsiang says of them that they were courageous, deeply attached to the principles of honesty and truth and highly esteemed learning.([15]) "A slender waist, feet red below and on the sides, high breasts large eyes, red and thick eylashes and dark and profuse hair were the characteristic marks of the genteel and beautiful lady of the age." Her forearms were full of bangles. She had large earrings, like those that nair ladies wear now, which touched her shoulders and large and beautiful neck laces. Their dress like that of the nair ladies of today consisted of a single piece of cloth tied round the waist about 3 inches below the navel. The royal family wore a kind of ornament on their biceps. At that time the only distinction that was made between the figures of human beings and gods or goddesses was that the goddesses had a hand going round their breasts so as to conceal the babies: From the sculptures we can infer that the people of those days were close observers of nature. The animal kingdom is largely represented there: and the figures show loving acquaintance with the animals and their characteristics. As evidence we may refer to the sculpture of a monkey seaching for vice in the coif of its female companion which is represented with the young one on its lap.

The Yazh and Veena were in existence One of them represented as we have at present and the other represented and the other represented without the domes. Then symbols also were in use.

A study of the styles of the sculptures will lead us to enunciate the following two propositions. 1. " The caves and the Rathas of Mamallapuram present certain marks of archaism that enable us to affirm that these monuments belong to an epoch anterior to that of Rajasimha.

15 Beals Bhuddhises Records of the Western World Vol. II.

(a) Nowhere do we find the 'Single arched Thiruvatchi' which was the only one used at the time of Rajasimha. But we see the 'Double arched Thiruvatchi' of the epoch of Mahendra.

(b) Nor do we see the rearing lions of Rajasimha; but only squatting lions.

(c) The evolution of Sanka and Chakra; the insignia of Vishnu gives another proof. In the time of Rajasimha they were ornamented with *flames of fire*. But in the epoch of Mahendra and in the caves and Rathas at Mamallapuram they are represented without the flames.

2. There is a certain resemblance between the caves and the Nathas of Mamallapuram and the monuments of the epoch of Rajasimha that enables us to affirm that the sculptured rocks belong to an epoch posterior to that of Mahendra

(a) In the epoch of Mahendra we do not see the squatting lions which are at Mamallapuram.

(b) At Mamallapuram we see the pillars with bulbous capital surmounted by a large abacus (Palagai) and nowhere in the art of Mahendra do we see a pillar having such an abacus.

(c) The dvarapalas of Mamallapuram do not present the front view as in the epoch of Mahendra, but only the side view and turn towards the shrine. Nor do they rest their hands on a club as those found in the temples of Mahendra.

(d) At Mamallapuram we see the images of Somaskanda at the backs of the shrine which are not to be seen in the epoch of Mahendra.

(e) Nowhere in Mamallapuram do we find the lotus ornament which is so often seen in the caves of Mahendra.

Thus by their architectural style the sculptures of the Rathas and caves of Mamallapuram, appear to be more ancient than the monuments of Rajasimha, but more modern than the temples of Mahendra or belong to the period of transition between the ages of Mahandravarman I and Rajasimha. This inference is confirmed by the evidence of the other documents we have.

N. SUBRAMANIAN, *II Class.*

[Prize Essay after an excursion to Mamallapuram.]

A LECTURE by Mr. FULL HAIRD.

Co-sufferers under the tyranny of razors,

I felt my vanity tickled a great deal when I received from your secretary a cordial invitatation to deliver this lecture. I thank you all for giving me a spelendid opportunity to give you a piece of my mind upon a subject which is next to my heart. You all know that for the past several years I have studied the subject and assiduously gathered all the available material. I have spared no pains, nor kerosine oil nor nights for the sake of these studies. Yet I have my own misgivings. For, this subject has been the first to which the least attention has been directed. For the subject has been too familiar too attract our brilliant-minded and self-sacrificing scholars. For the government itself has not been interested in the welfare of our race: the government has even gone to the extent of levying an income-tax upon barbers. Yet I hope that my remarks on this subject will be of some interest and value, as they have the weight of eight years' patient study, the indomitable courage of the first explorer of unknown regions of knowledge, and the pride that I am the first to raise my voice for the cause of our down-trodden nation.

Thus far I have given you an apologetic introduction. I will now proceed to draw your attention to our orginal, and contemporary conditions of our life and to the enemies under whose iron-heel we groan.

We were all once a fair and flourishing race dwelling upon the plateaux, popularly called the head, upper-lip, chin. During those days we were given the utmost wildness of liberty. We were then too insular to attract the selfish eyes of other nations. We had no racial animosities and so were free from the ravages of diseases

[The following paper is a veracious transcript of a lecture delivered by Mr. Ebony Fullhair'd under the presidentship of Mr. Longbeard to a vast gathering of people,—inhabiting the head, upperlip, chin—, on January 1, 1921.]

and the rude attacks of our enemies—I refer to the razors, cropping saloons etc. The average height of our race was five feet; and the normal color, the sign of health, was black and glossy.

But now, my friends, the unrelenting wheels of time have revolved and, as Tennyson sings,

"The old order changeth, yielding place to the new."

Our life now is the direct opposite of what it once was. Words fail me and emotions choke me when I now pause to think of the vissicitudes to which we have been subjected. The health and height of our race is now degenerating. We all look pale and sickly: we no more look black and glossy. That is just the reason why we are made the butt of the popular ridicule that the silver-individuals of our nation (and the majority are of this type) are of invaluable service to men; that is to say, of service in adorning the leg of women. From what heights of rich black prosperity to what depths of abysmal, pale misery have we been flung by the insidiousness of one of our enemies, known by the name of 'bile'! Nor is our growth in any way creditable. we who could once boast of five feet can now boast of a rat's tail, or, to be more precise and mathematical, of a pig's tail. (Sobs!)

Secondly, razors are our enemies. They are the most powerful, merciless and arrogant of enemies. I really wonder whether they have any moral susceptibilities in their iron constitution. They are so cruel and fierce that they order the wholesale massacre of our race, as though such things were affairs of no moment.

Well now I shall give you a concrete picture of a typical massacre that took place under my very nose. Without the least sign of approach, this coward of a razor, who had been lying in ambush somewhere in the barber's hand, suddenly set foot upon the pate, and in the most cowardly and unchivalrous manner butchered the whole family in cold blood—I mean in cold water and soap lather.

By God! what a pathetic sight!
" Like some rich hyacinth which by the Scythe
Of an unskilful gardener has been cut,
And lies, a fragrant tower of purple doom".

So lay the locks of hair, kissing the face of the dust. The spot which was inhabited by that noble and heroic family was one bald plain, without the slightest trace of their silent extinction. The spot suggested to me a barren plain when a bleak wind howls over it. Gentlemen, if you will have it so, the spot brought back to my memory the neat-looking water-melon and the glistening copper-pot used by our Sastries.

Thirdly, comes a more ruthless, a more callous and a more stone-hearted enemy: I refer to the cropping saloon. Nowadays when so much is made of 'aesthetic criticism and enjoyment, when what we popularly call 'hypocrisy and dissimulation' is raised to the dignity of 'statesmanship and diplomacy,' when an arrogant crushing of a weak nation is applauded for its bold and epic audacity, when a cold-blooded murder is rewarded for the artistic finish about it, when butchery is considered a fine art, what wonder if the scissors and other machines of the palatial cropping-saloon should try to be artistic. Indeed, it is no wonder, I repeat, if the irons and engines of destruction think of realising their own true selves, their artistic genius. But what is the source of their aesthetic delight is the death of us all. Nay, it is even worse than death: in popular phraseology it is a living death. For if people were suddenly put to death, there would be no trouble, no writhing agony, no limb torturing pain. But think of people murdered in a cold and artistic manner. Brother-sufferers I will be concrete. Think of a cold bath administered to a family of our nation as though they were rams led to sacrifice. Think what a biting chill and shivering cold that family must feel. And think again of the scissors and the other engines of destruction plying delicately amidst that family now quickly and fiercely like

the hawk, now slowly and steadily like the cloud and severing the relationshtp between the family and the pate. Our brothers now look like patches of grass when once they have been eaten by horses. Alas! that such should be their fate! A family that lived freely a minute before is now maimed and helpless, without a word of hope or comfort, drawing towards the threshold of grim-grinning Death.

Lastly, a word about the razor and the scissors of the royal hair-cutting saloon. The tactics of this enemy are fantastic. For while the razor busies himself with all the parts of the family save the central patch about the occipital lobe, and massacres them clean, the scissors cut all those long members of the above said central patch, except one single lock. And now all that remains of the family is the single lock of hair, surrounded by stubble-like growth to the extent of—let us be impartial—4¼ squre inches. Friends, they do not leave us just with this polite ceremony and worship. They go the extent of dubbing, I mean baptising, the miserable family by the pitiable name of a "B. A. fashion "Kudumi".

From all my preceding remarks you would have naturally lost all hopes about our future. But I must remind you of the noble lines of Milton.

> "All is not lost the unconquerable will
> The study of revenge, immortal hate
> And the courage never to submit or yeild".

For God and our good cause do fight on our behalf; and we have well-wishers, sympathisers and active helpers amongst humanity itself. Lest you should think that I utter a lie in referring to sympathisers amongst humanity, I have printed a long list of those men—and women too. But as the list is too lengthy to be read in toto I shall just read out a few eminent names from that long and venerable list. There we have the names of Michael Angelo, Shakespeare, Spenser, Tennyson, William Merris, Harounal

Raschid and, to come nearer home, Dadhabai Naroji. And further, have you not all of you heard of the Queen of France who sided with the rebels against the King, her husband, 'who affronted her smooth visage with a face like her own'. The people whose names I read out just now pay the greatest regard to our nation and are very solicitious about our interests. What better testimony of their sincerity of wishes do we want than their retaining the integnity of their beards and whiskers.

A word more and after that I conclude. Brothers if you have that vital spark of fire which the politicians call patriotism if you have an eye upon national self-respect and honour, if you have in view the hope of a happy future, if you dream of a day when our nation would be as free as the birds of the wilderness; then, in the name of our common cause, I exhort you all to be up and doing, to combat the enemies that I have referred to, so that our sons and grandsons and grand-daughters, if not ourselves, may reap the glorious and golden harvest of peace and liberty for which we the elder generation of today should sacrifice our all.

Brothers, remember this of our enemies. They are bloody tyrants and homiciders, people raised in blood and in blood establishsd,' and fighting under the leadership of Mr. Soap Lather. Brothers, remember this about ourselves In the great and good words of Shakespeare :

"God and our good cause fight upon our side,
The prayers of holy saints and wronged souls
Like high reared bulwarks stand before our faces."

And before I close, I propose three cheers for the prospective success of our cause—Hip, Hip, Hurrah—Hip, Hip, Hurrah..........(Loud prolonged and deafening cheers.

A MODERN MALAPROP.

Sheridan's Malaprop was a creation of his own. Her mistakes in what she herself calls "orthodoxy" have been often objected to as improbable for a woman in her rank of life; but though some of them, it must be owned, are extravagant and farcical they are almost all amusing; and the luckiness of her simile "as headstrong as an *allegory* on the banks of the Nile" will be acknowledged as long as there are writers to be run away with by the wilfulness of this 'headstrong' species of compositior.

But the Malaprop who is to be the theme of this paper is in flesh and blood and his utterances can be had even now. Neither are his utterances so extravagant and farcical as those of Sheridan's Malaprop. It is so natural with him and he is not conscious of his mistakes and therein lies the humour. A special feature of this Malapropism is that the former part of it will be a riddle to us while the latter part will very naturally explain what he really wanted to say. Without divulging who our Malaprop is nor dwelling at greater at length npon him I shall proceed to give a few specimens of his utterances.

"I tell you, Yates was a troublesome man, how much trouble be used to take".

"Truly Glyn Barlow is of a questionable character, always puts question in the class"

"Dr. Nair was a good cut throat, Ah! what an excellent man in throat operations"

"Have you tied your fees for the Examination, if not bring *actual* money" (with a special emphasis on actual)

",The respectability of these benches and tables, I mean their lenghs and breadths etc.................."

But more about him in another issue.

S. E.

॥ श्रीः ॥

॥ सुमनो मनोरथः ॥

शैले क्वचिन्मम भवेदुटजः प्रशस्तः
प्रच्छन्नपार्श्व युगलः सुमनोलतासु ।
संसेवितोऽतिमृदुलै र्विपिनान्तवातै-
रुद्भासितश्च विरलैः सवितुर्मयूखैः ॥

स्वैरं पिबन् मधुरसं मधुपालिवर्गो
यस्मिन् समुद्धृतसुनील पतत्रपङ्क्तिः ।
कुर्वंश्च झङ्कृतिरवं कलमुन्मदिष्णु-
रानन्दयेदति तरां मम कर्णपालीम् ॥

स्रोतस्विनी च धरणीभृदुपत्यकायाः
प्रान्ते प्रभुग्नगमना वहतु प्रकामम् ।
उद्यत्तरङ्गतरला विशदोदपूरा
स्नानेनमात्रमपि यत्र शुचो गलेयुः ॥

अप्यन्तिके तटरुहां विटपांतरेषु
लीनाः शुकाः सुमधुराणि फलानि भुक्त्वा
पारेनदि प्रतिवसद्भिरनल्पमित्रैः
सल्लापयन्ति सततं च नयन्तिकालम् ॥

अग्रेकुटीरमवनीरुह वाटिकानां
पुष्पेषु कर्बुरदलेषु मनोहरेषु ।
भास्वत्तुषारकणिकाभिरनुप्रभातं
पुष्येत काऽपि मणिमौक्तिकराशिशोभा ॥

मत्पाणिनाऽप्यवचितैः फलपुष्पपत्रैः-
र्नद्या जलेन विमलेन च मानसेन ।
भक्त्या यदि प्रतिदिनं हरिमर्चयेयं

स्यादेव जन्म सफलं भुवि मानुषं मे ॥

दिष्ट्याऽध्वखेदमपनोदयितुं यथेष्टं
प्राप्यास्मदीय सदनं बहुधाऽध्वनीनः ।
भोक्तुं मया सह यथोचितमच्युतस्य
नैवेद्यशेषमनघं मुदितः प्रसद्यात् ॥

शृण्वन्नथाऽस्य पथिकस्य विनोदवार्तां
पुण्यां पठन्नपि पुनर्भगवत्कथां वा ।
यद्वा पिबन्मधुमयीं गिरमर्भकस्य
शेषं दिनस्य गमयेयमहं सुखेन ॥

सायन्तनं सवनकर्म ननु प्रवृत्तं
भो भो जनाः कुरुतचैतदिति ब्रुवन्तीम् ।
आकर्ण्य शेषशयनालय पुण्यघण्टां
सज्जीभवेयमभिवन्दितुमिन्दिरेशम् ॥

अत्रालयेऽन्वहमहं विजहार बाल्य-
ऽप्यत्रैव मे त्वयि हरेऽजनि भक्तिरादौ ।
अत्रैव पादकमलं तव सेवितुं स्या-
मत्रैव संततमहो रमतां मनो मे ॥

P. V. RAMACHANDRACHAR M.A.,

சேரர் தலைநகர்.

(முன்னதன் தொடர்ச்சி.)

6. ‘செங்குணக் கொழுகுங் கலுழிமலிர்நிறைக்
காவிரியன்றியும் பூவிரிபுனலொரு
மூன்றுடன் கூடிய கூடலனையை’
(பதிற்று-பரணர்-50)

என்பதைத் தனக்காதாரமாகக் காட்டுகிறார்.

அஃது எங்ஙனம் கொங்கிற்கருவூர்தான் சேரர்தலைநகர் என்று காண்பிக்கிறது என்பதை நானறியேன். அதிலும் அக்கூடல் ஆம்பிராவதியும் காவிரியும் கூடுமிடமாகும் எனக்கூறுகிறார். அது ‘காவிரியல்லாமலும், பூமியிற்பரந்த மூன்று நீருடன்கூடிய கூடலை’ எனப்பொருள்படும். காவிரியும் ஆம்பிராவதியும் கூடும் கூடல் காவிரியின் ஒரு பாகமானமையின் அஃது இக்கூடலைக்குறிக்காது. ‘பூவிரிபுனல்’ எனக்கூறப்பட்டிருக்கிறமையான் அது பெரிய கடலையே குறிக்கும். ஆகவேஅக்கூடல் இந்து ஸமுத்திரம், அரபிக் கடல், வங்காள விரிகுடா ஆகிய மூன்றுங் கூடும் குமரிமுனையே யாகும். அதுகுமரிமுனையென்பது “பெருந்தெய்வத்து

வளைஞாலும் பணிப்பௌவத்துக்
குணகுடகடலோடாயிடைய மணந்த”
(பதிற்று 51)

என்பதால் நன்கு விளங்கும்.

7. வி. வி. கிருஷ்ணமூர்த்திராவ் அவர்கள் தனது வியாசத்தில் இராகவையங்காரால் காட்டப்பட்டதென ‘மதுரை யாவணியவிட்டமே, உறையூர்ப் பங்குனியுத்திரமே, கருவூருள்ளிவிழாவே’ எனவுள்ள இறையனாரகப்பொருள் வாக்கியத்தைக் காட்டி மதுரையும் உறையூரும் பாண்டிய சோழநாடுகளுக்கு முறையே தலைநகராயிருக்கின்றமையின் கருவூர் சேரநாட்டுத் தலைநகராயிருக்கவேண்டுமெனக்கூறுகிறார். அன்றி உள்ளிவிழா தற்காலத்தில் திருச்சிராப்பள்ளிக் கருவூரில் நடக்கிறதெனவுங் கூறுகிறார். இராகவையங்காரோ அவ்வாக்கியத்தை ‘மதுரை யாவணியவிட்டமே, கருவூர்ப் பங்குனியுத்திரமே, உறையூர் உள்ளிவிழாவே’ என மாற்றிக் கூறுகிறார். திருச்சிராப்பள்ளிக் கருவூரில் தற்காலம் ஆண்டிப்பட்டி ஜமீந்தார் பெத்தாச்சி செட்டியாரால் நடத்தப்படும் பங்குனி உத்திர

உத்ஸவம் அதேவூரில் முன்னாளில் சேரவரசன் நடாத்தியதைக் குறிக்கிறதெனக்கூறுகிறார். ஆனால் அகநானூற்றில்

'கொங்கர் மணியரையாத்து மறுகினூடு
முள்ளி விழவினன்ன' (368)

எனக் கூறப்பட்டிருப்பதால் இவர்கள் கூற்று சரியாகாது. ஆகவே அவ்வுள்ளி விழாவும் அது நடக்கும் கொங்கிற் கருவூரும் சேரர் நாட்டைச் சேர்ந்ததாகாது.

இதுவன்றி ராயர் அவர்கள் வியாசத்தில் இன்னும் பல தவறுகள் காணப்படுகின்றன. அவை விரிவஞ்சி இங்கு விடப்பட்டன.

8. சோணாட்டுக் கீழ்கடலில், காவிரிப்பூம்பட்டினத்திற்குத் தெற்கேயுள்ள மணிபல்லவத்திலிருந்து, வடமேற்கே வஞ்சிக்குச் சென்ற மணிமேகலை, கண்ணகி கோயில்கொண்டிருந்த செங்குன்று மலையை வழியிற்கண்டு, அக்கோயிற் பத்தினிக்கடவுளை வந்திப்பாள் சிந்தித்திறங்கி, அன்னையை வலம்வந்து வழிபட்டு அவள்பால் வரம்பெற்று மீண்டம்மலையினின்று மேற்கே வஞ்சிக்கு வழிகொண்டவள், முதலில் வஞ்சிப்புறவூருக்கும் பின்பு கருவூராமகவூருக்கும், மகோதைப் பட்டினத்திற்கும் சென்றாள் என்பது மணிமேகலையுள் 26-ங்காதையுட் கூறிய சரித்திரம். மணிபல்லவத்தி லிருந்து கண்ணகி கோயில் போவதாகப் புறப்பட்டு அவள் கோயில்கொண்டுள்ள செங்குன்றத்திற்குச் சென்று, மீண்டுங் கிழக்கே வஞ்சி வந்ததாகக்கூறாமல், புறப்படும்பொழுதே 'வஞ்சியுட் செல்குவனென்றந்தரத்தெழுந்த' மணிமேகலை வஞ்சிக்குப்போகும் வழியிற் செங்குன்றிலிறங்கித் தாய்கோயிற்பணிந்து பிறகு வஞ்சிக்குச் செல்வதாலும், அவ்வஞ்சி மேற்கேயிருப்பதென்பதும், கொங்கிற் கருவூரென்பது பொருந்தாதென்பதும் விளங்கிற்று.

இதுகாறுங் கூறியவாற்றால் திருச்சிராப்பள்ளிக் கருவூர் சேரநாட்டிலேயேயில்லையென்பதும், வஞ்சிமாநகரம் மேலைக்கடலோரத்துள்ள கொடுங்கோளூ ரென்னும் 'பழம்பதி' யாமென்பதும் விளங்கியவாறு கண்டுகொள்க.

N. சுப்பிரமணியன்,
II Class.

கடவுள் துணை.

ஒற்றுமைப்பத்து.

அறுசீர்க்கழிநெடிலடி ஆசிரியவிருத்தம்.

1. நம்மையாளுடைய வேந்தன் நாடது செழிக்கவேண்டிச்
செம்மைசேர் வழியொன் றெண்ணிச் செய்தன னகையாலே
மும்மையா முலகம்தந்த முதல்வனைப் போற்றி நாமும்
அம்முறை யளிக்கச்சேரும் அவையினை அண்முவோமால்.

2. ஆதிநாளுல களித்தோன் அமைத்திடாப் பொருளதாய
பேதமொன் றேந்திநாமும் பேதுற லடைவதேனோ
சோதிசேர் படிவம்கொண்ட சுந்தரன் பாதம் போற்றின்
வேதிய ரல்லாதாரும் வேதிய ராவரன்றோ.

3. ஆதலாலவைகள்சேர ஆற்றுமக் கடமை தன்னை
நீதியோ டியற்றிநாமும் நேர்மையைப் பின்னும் வேண்டி
ஓதியே ஒருமையோடு உத்தமவழியி னின்றால்
பூதல மகிபன்றானும் புரிந்திடும் இதங்களெல்லாம்.

4. மன்னரை மாந்தருய்ய மதிமுத லீன்றதாலே
அன்னவ ரளிப்பதெல்லாம் அமைதியை நாடியென்றே
உன்னுவீ ரமர்களேநீர் ஊதையிலோடும் கஞ்சல்
என்னவே பிறர்களேச இருத்தலு மமையுமோதான்.

5. அமர்புரி அரங்கநீங்கி அடைந்தனன் வெற்றியோங்க
நம்மையா ளுரிமைபூண்ட நாட்டுறை மன்னன்றானும்
இமயமால் வரையின் தென்பால் இருந்திடாரியர்க ளெண்ணி
அமைதியை வேண்டியாதி அடியினை பணிந்ததாலே

6. கருணையைக் கையிற்பற்றிக் கடவுளும் களிக்குமாறு
பெருவினை இழைப்போமாகிற் பேய்ப்பொரு ளாசைநீங்கி
இருமையின் பயனுமெய்தி இன்பமு மூறமென்மேல்
திருவினு ளருளேசேரத் தீர்வமே குறைகளெல்லாம்.

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1. அவை = சபை. அண்முதல் = கிட்டுதல்.
2. பேதுறல் = மயங்கல். படிவம் = உருவம்.
3. அவைகள் = சபைகள்.
4. மாந்தர் = மனிதர்; உய்ய = வாழ; மதிமுதல் = கடவுள்;
உன்னுதல் = நினைத்தல்; ஊதை = காற்று; கஞ்சல் = குப்பை.
5. அமர்புரி அரங்கம் = யுத்தகளம். ஆதி = கடவுள்.

7. கிளிமொழிச் சிறுவர்தம்மைக் கிட்டியே கூட்டிச்சென்று
வெளியிடமதனில் வைத்து வீணுரையாடி வேந்தன்
அளித்திடு முதவிகொண்டு ஆக்கிடும் சாலைநீங்கி
ஒழித்துநீர் செல்வீரென்றால் உவப்பரோ புரிவுளோர்தாம்.

8. மன்னவன் பணிகளெல்லாம் மனமுற வியற்றிநாமும்
அன்னவ னன்புபூண்டு அருட்குடையோன்றன்பாகம்
பின்னவனோடும் போற்றிப் பெருமகிழ் வெய்தலாகும்
நன்னய மகன்றானாடும் நலிவொன்றே யடையுந் திண்ணம்.

9. நதிபல கொழிக்கும் செல்வம் நறுமலர்ப் பாதவங்கள்
துதியெடுத் தழைப்பதே போற் றோன்றுறு சாரல்கொண்ட
மதிபுனை மலையொடாங்கண் மருந்தமை ஆர்யவர்த்த
நிதிபடை மாந்தரேநீர் நின்மலனருளே வேண்டும்.

10. கண்டிலாக் காட்சிநல்கும் கங்கையே சிந்துவென்றும்
மண்டல வளங்களூட்டும் மாநதியோடு நாடு
கொண்டுமே செங்கோலோச்சும் கோமகன் புனிதனன்றோ
அண்டியே அவனையும்பால் அளியுளோனாக்கி வாழ்வீர்

முற்றிற்று.

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7. சாலை = கல்விச்சாலை; உவத்தல் = சந்தோஷித்தல்;
புரிவு = அன்பு.
8. நலிவு = வருத்தம்; அருட்குடையோன் = கடவுள்;
திண்ணம் = உண்மை.
9. பாதவம் = மரம்; நின்மலன் = கடவுள்.
10. ஓச்சல் = செலுத்தல்; புனிதன் = பரிசுத்தன்;
அளி = அன்பு.

THE ASTRONOMICAL KNOWLEDGE OF THE INDO-ARYANS.

BY

T. V. Srinivasa Ayyangar B. A. B. L.

Every Schoolboy knows that there was an observatory at Ujjain which was flourishing in the days of Asoka and was finally destroyed by the Turks. Ujjain lay on the Tropic of Cancer and the longitude passing through Lanka Ujjain and Kurkshetra was called the Madhyarekha. But it is not so well known that there were observations of the Indo Aryans in very ancient times. There was once an observatory on the central peak of Mount Sringavan, and and its two other peaks marked the extreme limits of the Sun's motion to the South and the North. Vishnu Purana mentions it in Amsa II Ch. 8 V. 73. In those days, Sridhara believes that the year began with the month of Margasirsha, and that was about 18,500 years ago.

The Indo-Aryans in ancient times lived by themselves in SwetaDwip, somewhere in the Arctic regions, and attained to a very high state of civilization. Owing to a change of climate or through love of adventure, they travelled southwards and came in contact with other nations, who subsequently became the three other Varnas.

The Indo-Aryans had perfected their philosophy before the Vedas were composed. The Brahma Sutras were the manual of their philosophy as the Vishnu Purana became the manual of their religion. The Brahmasutras are older than the Vedas. The conception of their philosophical God was based on a knowledge of astronomy and of the physical sciences. From a scientific analysis of the physical world and from a nebular theory of the origin of the world, they had formed their ideas of Srishti and Pralaya. Conceiving a prensbular homogeneous imponderable (सूक्ष्म) fluid state of the universe in which all matter and all souls were inseparable from God though they were not destroyed

and their identity not lost, the Aryans predicated a change to a nebulous ponderable fluid state called Creation. The two nebuloe were talked of as two oceans, the mere knowledge of which saved all souls (since applied to the Setu at Rameswaram.) The Sun is said to have risen from a wide ocean.2 The whole world is supported by gravitation or Vasudeva's Virya. Their God Vishnu is said to pervade the whole Universe, and has His highest heaven or

तद्विप्रासो विपन्यवः जागृवांसः समिन्धते। R. V. I.

य उदगान्महतोऽर्णवात् विभ्राजमानः सरिरस्य मध्यात्।

Vaikunta above the North Pole in a direct line in the unmanifested portion of the universe. This is talked of in the earliest portion of the Rigveda.

तद्विष्णोः परमं पद सदा पश्यन्ति सूरयः। R. V. I.

The Saptarishi-mandala (सूरयः) fixes the North Pole as its centre also Vishnu Purana II. 8. 98. The god makes its incarnations in two other places also the Milky Way and the Centre of the Sun.1 The Milky Way (called शिशुमार in Vishnu Purana II. 9. 1.) is still supposed to be the centre of the visible universe, and the sum is the centre of the Solar system. They both lie on the axis of the universe. The Avator in the Kshirabdhi is Aniruddha or Puresha of the Purusha-Sukta, and has the 24 kinds of matter and the soul as his ornaments and instruments for governing this world. The star Sravana has Vishnu as its presiding diety, probably because it is situated in the Milky way called also the Sravana Vitthi (वीथी). The colour of the God is sometimes said to be blue, perhaps from the blue vault which is nothing but an imaginary background formed by the atmosphere that surrounds us, and sometimes his body is said to shine like gold or lightning (रुक्माभं) The path to Moksha of the souls lies along the axis of the universe from the outer world to the innermost through the Sun. It is called the Archiradi-Marga.

The souls in bondage go to the Moon and return again to their cycle of births.

As soon as the Brahmin priesthood was established and the hymns of the Rig Veda were finally complete, the system of sacrifices was developed, and the Brahmanas were specially devoted to the explanation of the mysterious process of fixing the dates, the number of the ceremonies and the manner of celebrating the sacrifices. The RigVeda is full of references to astronomical facts. Some of the most imaginative passages in praise of the deities are based on a thorough knowledge of astronomy. By a process which has been described as 'herotheism' such praises are addressed to each God in his turn. Their knowledge of astronomy was made use of in their capacity as ministers of religion and as advisers of their disciples when they consulted them as to agriculture. In fixing the festival days, they made use of their knowledge of astronomy, as also in fixing the time for sowing seeds, for transplantation, in fixing the ceremonies of the dead, in predicting eclipses, and in arranging the sacrifices for the year. Thus the Aryans never allowed their knowledge to rust for want of practical application.

अंभस्य पारे भुवनस्य मध्ये नाकस्य पृष्ठे महतो महीयान् ।

"A year of 360 days with an intercalary month occasionally added, or a year of 12 lunar months with 12 intercalary days inserted at the end of the year, was familiar to the poets of the Rig-Veda......The R. V. differed, if at all, very little from the one in use at the time of the Thaithraya Samhita or the Brahmanas. A calender of 12 months and 6 seasons is peculiar only to the temperate or the tropical zone, and if we were to judge only from facts stated above, it follows that that the people who use such a calendar must have lived in places where the Sun was above the horizon during all the days of the year."—Tilak's 'Arctic Home,' p. 61.

The Sattras and ayanas lasted for 360 days of which the 180th was the Vishuvan (now denoting the equinox) or Central Day, and the sacrifices for 10 months were got by striking off five Shadahas and the ayanas by suitable variations. Sometimes the year consisted of 7 months sunshine, 1 month dawn, 1 month evening twilight, and 3 months continuous night. The Sattra closed with the long night and the atiratra was performed before the night began and again at the end of the night. R V. VII. 103. 6.

It necessarily follows that astronomy follows that astronomy should be supplementary to the Vedas. The six angas include Jyotisha which is pure astronomy. Astrology was not believed in by the sceptic Aryans; but when later disciples, like the Chaldeans and the Greeks, were found to believe in astrology, the Aryans developed it into a science. The authority on that subject was said to be Garga whose name is plainly connected with "Greek" Such similarity of sounds is not quite accidental, as may be inferred also in the case of Kardama and the Kurds, the Uttarakurus and the Uttargurians of Gibbon. Garga is referred to in the Mahabharata, Gadaparva, Ch. 37 V. 15—16 and in the Sri Bhagavata when he goes to Srikrishna and performs his Upanayana.

The Saptarishis are said to be looking at the Pole where Vishnu's Highest Heaven is said to stand eternally. But they themselves change for each Manvantara. This is a poetic way of saying that there is no star at the Pole, but that the nearest star is one of a number of constellation each consisting of seven stars which lie on a circle round the real Pole. When the points of intercession of the equator and the ecliptic move owing to the precession of the equinoxes, these stars become each in its turn the Polar Star for the time being "The present polar star will, in about 13000 years be 46" from the Pole; and long before that, will have lost its claim to the title. At present it is still approaching the pole, and will do so yet for about 150

years ; but the small circle which the pole describes passes by other bright stars which will become the polar stars in turn." Godfray's astronomy, p. 224.

The earliest stage in the development of astronomy should be the knowledge of the progress of the moon through the stars from day to day. The constellations through which the moon passed were called nakshatras and fixed as "the mile stones in the heavens." The other stars went by the name of Bha or Tara. The planets were distinguished by the name of 'Grahas.' Vishnu Purana, II. 9. 3. and Raghuvamsa VI 22. The nakshatras were 28 at first to correspond to the successive halts of the moon. The period of a revolution of the moon with respect to the first point of is 27 d. 7 h 43 ms.; and with respect to the Sun 29 d. 12 h. 44 ms. The knowledge of the motion of the Sun annually among the same stars came later The year was a more useful unit of time as it denoted the progress of the seasons which regulated the cultivation of the fields. The number of the stars continued to be 28 for a long time, though it was reduced to 27 at some unknown period referred to in the Mahabharata. Abhijit was the star that was thrown out of the list and its place was between Uttara Shadha and Sravana. 1

There is a curious relic of the transition from the lunar to the solar calendar. The months even now are called after the star in which the fullmoon day occurs. But a suitable arrangement has been made for calculating the motion of the Sun among the same nakshatras . The same month has got two names according to the way in which we look at it. It is the Chaitra month or the Mesha Masa ; and so on. This is an example of how the Indo-Aryans preserved their old knowledge while adopting all later improvements.

The months and the seasons had older names according to V. P. II. 8. 81.

A closer observation of the Sun and the Moon led to the adoption of a cycle of 5 years called yuga (and Manusha yuga afterwards), which made the four kinds of months, lunar, savana, solar and stellar, coincide at the end of each cycle. Later a cycle of 60 years (called Daiva yuga probably) at the end of which the Sun, Moon, and the planets arrived at the same starting point was also adopted. (उपरिष्टादाषाढानां अधस्ताच्छ्रोणायाः)
The Moon made a circuit of the heavens in 27 days, Mars in 18 months, Venus and Mercury in one year, Jupitea in 12 years, and Saturu in 30 years. V. P. II 12, 16—20. This cycle does not take account of the 18 years' period of Rahu and Ketu. As day and night are the two halves of the period of rotation of the earth on its own axis, the month was divided into two halves, the bright and the dark, the bright half being considered as the night of the Pitris. Similarly the year was a day of the Devas and divided into the Uttarayana and the Dakshanayana. At the north Pole the Sun remains visible while on the north side of the equator from the vernal to the autumnal equinox, and this day of 6 months is followed by 6 months of perpetual night. The day and night of Brahma consisted of 12000 years or a Chaturyuga each. This period of 24000 years represents the time when the Sun and the other planets start from the same rasi again. The verse in Manusmrithi fixing the length of Brahma's day must have originally read as follows:—एतद्द्वादशसाहस्रं ब्राह्मं पुण्यमहर्विदुः It was amplified by the insertion of six padas between the two original ones; and they are now v. 70½—72½ of adhy. I of Manusmiriti. Brahma's day is multiplied by 1000. This mistake was copied into the Mahabharata, Vana parva, ch. 188.

The Aryans have their calendar in full tact even today. Their calculation of time extends naturally over a very long period, and they have therefore large units of time. Each

day every orthodox Hindu is bound to repeat his Sankalpa before beginning each religious act.

अस्य श्री भगवतः विष्णोराज्ञया प्रवर्तमानस्य अद्य ब्रह्मणः द्वितीय-परार्धे श्रीश्वेतवराहकल्पे वैवस्वतमन्वन्तरे कलियुगे प्रथमपादे जंबूद्वीपे भारतवर्षे भरतखंडे शकाब्दे प्रभवादिषष्टिसंवत्सराणां मध्ये ....नाम संवत्सरे ....अयने ....ऋतौ ....मासे ....पक्षे ....तिथौ ....वार ....नक्षत्र....) .

Now beginning from the Tithi, they calculated Paksha masa, season, half-year, year, cycle of 60 years, yuga in four parts, manvantara, kalpa, Parardha and Para. One hundred years of Brahma is called Para and 50 years of the same is called Parardha V. P. I 3, 5. One day of Brahma is called Kalpa, and a day and night was probably called Maha-Kalpa. There are 14 manus in each day and night of Brahma, and each Manu has his own set of Saptarishis, Devas, and Indra, and Manu's son. Originally a day and night of Brahma consisted of two chaturyugas of 24000 years or 25800 more correctly. Thus a manuvantara will consist of nearly 1843 years. 6 Manus=12000 $\times \frac{6}{7}$ years. When the Brahma's day or night was elongated, Manu's duration was likewise lengthened. The Mahabharatha war and the subsequent period made a complete change in the calculation of the Yugas. Kali which calculated as consisting of 1000 years with 200 years sankhya was made to consist of 360 times as many years. Thus Vaivaswata Manu must have closed the day of Brahma and Kali will end with Brahma's day. Vaiswata Manu must have begun his life ($\frac{25800}{14}$—1200) or 643 years before the close of the Dwapara yuga and he founded the solar line of King's of which Rama was the most illustrious. The next higher unit is a Brahma's year. From the time when this era began, a 50 ears' period of Brahma has elapsed. The last day of the old Prardha was Padma महाकल्प probably equal to a day and night of Brahma); and the first day of

the second Parardha is Varha Kalpa. V. P. I 3 27—8. This Kali ought to have ended and Krita yuga begun 9000 and odd years ago, according to a verse of the Mahabarata which will be discussed later on. Thus (24000 × 360 × 50 + 12000 + 9000 and odd) or 432,012,000 + 9000 and odd years have passed since the beginning of the Aryan era. V. P. I 3, 5, and 27—8; III 2. 50—3.

The 14 manus in a Brahmas's day must have been seven for the day and seven for the night. Otherwise Vaivaswata Mann the 7th cannot come in at the end of the Dwapara and the beginning of the old Kali of 1000 years. The Manus would have been more properly 6 for a chaturyuga of 12000 years; but as the period of a complete revolution of the first point of Aries was known to be 25800, the Manus were 7 for each half or 14 for the whole day. Thus we see that the ancient Aryans know the period of 258000 years and also that 14 Manus were for a day and night of Brahma. Subsequently when the yugas were unsettled, the Kalpa and Manvantara were both lengthened.

The calendar is ordinarily calculated from old tables; but is often corrected by direct observation or Drigganita. Sri Krishna corrected the new moon day before the Mahabharata War to the day previous to that in the ordinary calendar and justified his action by pointing out that the Sun and the Moon were then found together before him among the Devas who had come to question him.

The ancient Hindus had a knowledge of the cycle of eclipses and substantiated their claim to super human knowledge and power over the heaven by bodies and over the Gods that were supposed to inhabit the midair or antariksha by foretelling the disappearance of these heavenly bodies and their reappearance. Later on the common herd was intimidated by the story of Rahu and Kethu who persecuted the Sun and the Moon because of their old enmity at the distribution of the Amrita. But

when the earth, the Sun, and the Moon are in a straight line, Rahu and Ketu are only the shadows of the earth and the moon when they fall on the sun respectively. V. P. II. 12. *22*. They are therefore supposed to be exactly opposite to each other always. They are supposed to stay in each rasi for 18 months and to move backwards along the zodio, making a complete revolution in 18 years. These imaginary points may be figuratively spoken of as permanent beings and attributed human motives also. The moon's node has a daily retrograde motion of 3′ 10″·64 and will return to its original position in about 18·6 years. If the moon's orbit corricided with the ecliptic, solar eclipses would recur at every new moon, and lunar eclipses at every fullmoon. But as the moon's orbit, is inclined at 5′ 9″, eclipses occur when the sun and the moon come near the rodes, and eclipses repeat themselves every 18 years. This cycle was called the Saros by the chaldeans. 223 lunations occupy 6585 days, and 19 synodic revolutions of the node occupy the same number of days. 41 solar and 29 lunar eclipses occur every 18 years.

To enable Arjuna to fulfil his vow and kill jayadratha before sunset, Sri Krishna is said to have covered the sun with his disc and removed it when Jayadratha came out. This must refer to a solar eclipse that took place then. If it is true that the Mahabarata war was begun on a newmoon day, the next newmoon could not have occured during the war. The two stories must have been written

आदित्यान्निस्सृतो राहुः सोमं गच्छति पर्वसु ।
आदित्यमेति सोमाच्च पुनः सौरेषु पर्वसु ॥

at different times without reference to each other. The fact of a solar eclipse is taken advantage of to give Sri Krishna a miracle to prove his Godhood.

The motions of the 5 old planets are confined within a zone of 8° on each side of the ecliptic; and this zone was called the *Zodiac*. The zodiac consist of 12 Rasis or

Signs It is talked of even in the Vedas!. The names of the signs in Sanskrit and in Greek have the same meaning. The distance between any two of the 27 stars is so adjusted that the time which the Sun takes to pass through a rasi is a solar month. The distance is also such that six rasis are above the horizon during the day, and the six remaining rasis during the night, whatever the length of any day or night. The proportionate length of the rasis beginning from Mesha is $4\frac{1}{4}$, $4\frac{3}{4}$, $5\frac{1}{4}$, $5\frac{1}{2}$, $5\frac{1}{4}$, 5, $5\frac{1}{4}$, $5\frac{1}{2}$, $5\frac{1}{4}$, $4\frac{3}{4}$ and $4\frac{1}{4}$. The whole day consists of 60 naligais. On the day of the vernal equinox the first six rasis counting from Mesha occupy 30 naligais, and the Sun remains 30 naligais above the horizon. The night also is of the same length. On the day of the summer solstice, the six rasis beginning from Kataka occupy $31\frac{1}{2}$ naligais, and the day consists of $31\frac{1}{2}$ naligais. The night is $28\frac{1}{2}$ naligais long. This sort of calculation of the length of each day and the convenient reference to the stars for the calculation of time at night without any clock are peculiar to the Hindu system of astronomy. The system of notation used is Katapayadi. The formula are शोणा मेषे रत ch. This means that when Sravana is overhead, it is $2\frac{1}{8}$ naligais passed in the Mesha rasi. We know where the Sun is at that time of the year and the month, and we can almost accurately give the hour of the night at which we are speaking.

The longest day in the year according to the above explanation will consist only of $31\frac{1}{2}$ naligais and such a day is actually time for Madura in the Madras Presidency. (lat 10°). Therefore the Hindus must have travelled over the whole earth by that time and their calculations are not for any particular place, because they have become world priests with no particular place os abode. But there is a verse in the Vishnu Puraua (II. 8. 34) which makes us infer that the Aryans had as headquarters then a place where the solstical days were 36 and, 24 naligais long.

द्वादशारत्नी रशनामवति द्वादशमासाः संवत्सरः ।

The story of Trisanku in the Ramayana contains a curious reference to the zodiac. Visvamitra created another zodiac intended to be, or capable of being used in the Southern Hemispere, fixed the South Pole where he stationed Trisanku as Dhruva is reputed to have been stationed at the North Pole by God Vishnu, and created another set of Saptarshis. But the Gods ordained that Trisanku should hang head downwards, as a punishment for having offended his teacher; but that is the real state of the antipodes at that place. Trisanku was also black owing to the hot climate. BalaKanda, Sarga 60 v. 21, 22 and 32. Agastya is reported to have gone south never to return to the north, and the star of that name takes the place of the Saptarshis in the north.

Theoretically the rasis are to begin from the one in which the Sun is situated at the time of the vernal eqimox. The 27 nakshatras are usually repeated in that order. At present, the vernal equimox is supposed to occur with the Sun in the Mesha rasi and in the nakshatra Aswini. Therefore the 27 stars are counted from Aswini. But the precession of the equimoxes makes a change in these from time to time. Hipparchus, about 120 B. C., discovered the precession and the first point of ♈ was then in Aries, but is now in Pisces. The equinox or the first point of Aries moves backward one rasi in every 2150 years nearly. At present it is about 22 days earlier than when the Hindu calender was set right last in the year of Kali 3600 or 399 A. D. The equimoxes then occured on the 13th of April and of October with the Sun in Mesha and Tula; and now they occur on the 21st of March and of September with the Sun in the second quarter of Uttaraproshtapada and in the third quarter of Uttara Phalguni. Oblations given and tarpanas performed will have no efficacy rulers performed on the proper equinoctical days. V. P II. 8. 78. Sridhara points this out in his commentary and also adds that in his day (4400 Kali) the equinoxes occured 12 days in advance

of the calendar. (v. 75). It is thus apparent that we have not corrected our calendar after 399 A. D. That the calendar was set right from time to time is expressly stated in Vishnu Purana II. 8. 87.

The equinoctical days were observed in ancient times with the Sun in Vrishaba rasi or in the nakshatra Krittika, and again in Mithuna or in Mrigasirisha, and so on. Evidences of such changes are found in the Puranas by the repetition of the mention of the equinoxes as observed at both periods. V. P. II. 8 v. 76. 7. In the Vedas this is evidenced by a singular phenomenon. That portion of the Yejur Veda that describes the nakshatras with their presiding deities begins at that day.

कृत्तिकानक्षत्रं भवत्यग्निर्देवता ।

This shows that the arrangement of the Vedas suitable to the change of conditions was last performed with the Sun in Kritika at the vernal equinox, *i. e*. about 3600 years ago. When the Hindu calendar was set right in 399 A.D, the wise men in India dared not alter the Vedas even in this simple matter. They ought to have begun with अश्विनीनक्षत्रं भवति ch The responsible officer who was in charge of these and other alterations to be made in the Vedas from time to time was called Vyasa, and Krishna Dwaipayana Vyasa was the 29th in the list, and the 30th ought to be Aswathama, son of Drona. V. P. III.

The fact that the nakshatras were made to begin from that nakshatra in which the Sun stops at the vernal equinox gave rise to a story in the Mahabarata. Tradition remembered the fact that the star Abhijit was cast off from the zodiac for purposes of calculation. As the place of Abhijit is in the middle of Makara rasi, $9\frac{1}{2} \times 2100$ or 20000 years nearly have intervened between the time when Abhijit ought to to have stood at the head of the nakshatras and the time when Aswini was made to head the list. Since this latter date 1500 years have passed, and therefore the

date when Abhijit was to head the list must be 21500 years before now. Then it was thought that Abhijit was not necessary, and the nakshatras were reduced from 28 to 27. This is poetically referred to in the Mahabharata, Vanaparva, ch 229, v. 7—11. "Abhijit, the younger sister envied Rohini (correctly Sravana) for her foremost position and therefore retired to the forest, to perform austerities. The constellation having thus fallen from the sky, Indra does not remember when it took place He asks Skanda to consult Brahma if he wants to know more particulars about that remote period. There was also a time when Brahma counted time from Dhanishta. Long after Rohini was at the beginning of time. Thus calculations were made correct from time to time. While Indra was speaking thus, the Krittikas went up and that constellation, with seven stars and with fire as the presiding diety, shines with added lustre. (We take Mr. C. V. Vaidya's translation in his Epic India p. 310 with the necessary corrections).

उक्तः स्कन्देन ब्रूहीति सोऽब्रवीद्वासवस्ततः ।
अभिजित्स्पर्धमानातु रोहिण्याः कन्यसी स्वसा ॥
correctly (शोणायाः)
इच्छंती ज्येष्टतां देवी तपस्तप्तुं वनं गता ।
तत्र मूढोऽस्मि भद्रं ते नक्षत्रं गगनाच्च्युतं ॥
कालंत्विमं परं स्कन्द ब्रह्मणा सह चिन्तय ।
धनिष्ठादिस्तथा कालः ब्रह्मणा परिकल्पितः ॥
रोहिणीत्वभवत्पूर्वमेवं संख्या समाभवत् ।
एवमुक्ते तु शक्रेण त्रिदिवं कृत्तिका गता ॥
नक्षत्रं सप्तशीर्षाभं भाति तद्वह्निदैवतं ।

This passage at first speaks of a time not within the memory of even Indra whose life 1843 years long, when Abhijit was taken out of the list of nakshatras. Brahma who ought to have lived then must know. Before that time Dhanishta was at the beginning of the list of the 27 nakshatras In course of time Sravana (incorrectly spoken

of as Rohini in verse 8) came to be the first in the list. Later people counted from Uttarashadha, and so down to Mrigasrisha. Each rasi moving away in 2100 years, each nakshatra would have stood at the head of the list for about 900 years. Then it became Rohini's turn to head the list, and after another 900 years, the time for Krittika came. That was when the conversation took place between Skanda and Indra, and Krittaka acquired a new lustre.

This episode is introduced while narrating the birth of Skanda and the request of the wives of six of the Saptarishis (excluding Arundhati) to save them from the obloquy which Swaha had brought on them by assuming their form and co-habiting with Agni. The Krittikas consist of 7 stars and poetically those ladies (with swaha probably) were identified with those stars and prominence was given to them by their being placed at the head of the 27 nakshatras. This must have been 3600 years before now, and as 5020 years are said to have elapsed since Kali began or since the Mahaprarthana of Yudhishtira, the birth of Skanda is clearly a latter addition. The enumeration of the 27 stars in Anushasana Parva ch. 64 must be of the same date as it begins with Krittika also.

The present Kali yuga is said to have begun when Yudhishtira was still reigning. Again it is said that Kali did not come in so long as Sri Krishna remained in this world. It is also expressly stated in the Mahabarata, Vana Parva ch 190 v. 91, that Krita yuga was to begin when the Sun, the moon, jupiter, and Tishya (Pushya) would come together in one rasi.

यदा चंद्रश्च सूर्यश्च तथा तिष्यबृहस्पती ।
एकराशौ समेष्यंति प्रवर्त्स्यति तदा कृतं ॥

We will have to follow these statements to their consequences When the Sun and the Moon are in conjunction, it is the newmoon-day. The newmoon-day occurs in Tishya almost every year in the month of Ashada. [Itoccured also this year in Ashada. It may occur in the

month of Sravana also.] As Brihaspati is mentioned also, probably including the other planets, it is the beginning of a new cycle of 60 years. Krita yuga was to begin a new cycle in every way. As every year is usually supposed to begin at the vernal equinox, the month of Ashadha should have begun the year then. Allowing for the precession of equinoxes, this must have happened (1500+6500) or about 8000 years ago (6100 B. C.), Krita was expected to begin then, and therefore Kali which consisted of 1000 years only, must have come in 9000 years before now (7100 B.C.)

But how is it tcat only 5000 years are now reckoned in the Kali Era? The Yugas as mentioned in the Maha-bharata (Vana parva ch 188 V. 22—27) and the Manu-smiriti are only 1000, 2000, 3000 and 4000 years in during with the Sandhyas added. A chaturyuga was a day of Brahma. Later on they were supposed to consist of years of the Gods, and so were multiplied by 360 and then the Kali Yuga became 432,000 years long. When was this interpretation suggested and why? The explanation is this When Yudhishtira went away, Kali, instead of being considered to be a portion of an astronomical period of 24000 years, which corrected the precession of the equinoxes, began to be interpreted as meaning 'Kalaha' or an irrational fight for property. Though this interpretation was given to it, probably owing to the fight of the Pandavas and the Kurus for the sake of a kingdom, this unnatural struggle was expected to end in a thousand years and with it Kali also. Though the conjunction of planets which was expected to introduce the Krita Yuga, must have occured at the end of the thousand years, the disturbed state of the country did not permit them to say that Kali or Kalaha was at an end. All sorts of explanations were suggested. A period of transition or Pralaya was supposed to come in between Kali and Krita which was expected to last for 12000 years. Before that transi tion ended Balarama and Sri Krishna reigned on earth; and even after them Kalaha did not cease. Therefore

people preferred to call Krishna's reign a part of Dwapara Yuga. A final solution was arrived at of multiplying 1200 by 360 and since then 5000 years have gone by. The interval between the passing of Yudishtira when Kali ought to have come in and the passing of Sri Krishna which finally began the present Kali Era is (9000—5000) or 4000 years.

There are are several layers of fossil deposit even in the account of Markandaya which is given in Vanaparva ch. 188—91. Markandaya has been blessed with a long life and is therefore a fit person for giving an account of longforgotten periods and of the future also by his superior knowledge. Hanuman is made to give another account of the yugas in Vanaparva also.

I. Markandeya's earliest version gives an account of Kali which occurs at the end of each day and night of Brahma—*i. e* once in every chaturyuga of 12000 years. There is a confused tumult at the end of the Kali Yuga. Thieves had the upper hand, and the Brahmins ran from place to place for help. Order is expected in the ordinary course and at the end of the 1000 years forming the Kali Yuga. ch. 188. pp 484-6; ch. 190 pp. 495—500 (cal. Edn). Then without any interference everything turns round and becomes amenable to order again.

ततस्तुमुलसंघाते वर्तमाने युगक्षये ।
द्विजातिपूर्वको लोकः क्रमेण प्रभविष्यति ॥
ततः कालान्तरेऽन्यस्मिन् पुनर्लोकविवृद्धये ।
भविष्यति पुनर्दैवमनुकूलं यदृच्छया ॥

There ought to have been no mention of Sri Krishna then. But another incarnation, Kalki, is talked about. The Kshatrya, Vaisya and Sudra Kings being now exhausted, the Krita Yuga is to be inaugurated by the God incarnating in a Brahmin family. He acquires facility in the use of weapons, becomes the emperor, kills all Mlecchas and establishes order again. ch. 190, v. 92½—99. The next chapter (191) describes the advent of Krita normally.

II. In the second stage, as Kali or Kalaha did not end in 1000 years, it was thought that this was not the mere end of a day or night of Brahma, but that it found Brahma sleeping. Owing to Brahma not being awake and active, things were in a state of perfect disorder and decomposition called Naimittika Pralaya, which was to end in another chathuryuga or night of Brahma and was to be followed by fresh creation. ch 189 v. 41, 48—9. V. P. I. 3. 25. Markandeya wandered through the wide waters which filled the whole world and found a child sleeping on a banyan tree. That child was the God Narayana whose transition state (अभंतरशिरारं) Markandeya was permitted to see. The child opened its mouth and Markandeya went into His stomach. Markandeya found there countries in perfect order with all the four castes doing their duty. ch. 188 pp. 486—91; ch. 189 pp. 491—5.

III. The next period of confusion deepening and prolonging itself brings BalaRama and Sri Krishna on the stage. But these were represented to be still living in the Dwapara Yuga, and there was no need to interfere with Markandeya's account of the end of Kali as narrated to Yudishtira. Krishna is identified with the child on the banyan tree and the Pandavas appeal to him for protection. ch. 188 v. 18. ch. 189 v. 52—9. But the date fixed for the beginning of Krita became useless and altogether unnecessary though it was allowed to continue as part of the text.

IV. In the last stage the yugas were explained as consisting of years of the Gods and Kali is lengthened to 432000 years. V. P. I. ch. 3 v. 11. There was also an attempt to say that Brahma's day and night consisted of 1000 chaturyugas each. V. P. I. 3. v. 15. Till the end of Kali there is no more need for talk of the yugas. The beginning of Kali is according to them after the ascent of Sri Krishna to Heaven—5020 years ago.

All Hindu festivals are based on astronomical grounds. Each month is called after the star in which the full moon occurs. Every fullmoonday is enjoyed as a festival

and every newmoonday tarpana for the dead is performed. Mahamakha occurs every twelve years on the fullmoonday in the month of Simha when jupiter happens to be in conjunction with the moon. The eqinoxes begin the solar-year, and the beginning of every month is observed by all as a ceremonial day. Rathasaptami is the day on which the Sun's car turns northward. Each Tithi is given due honour, as for example, akshaya Tritiya, Vinayaka chathurthi, Rakshmi Panchami, Skanda Shashti, Ratha-saptami, Gokula Ashtami, Rama Navami, Vijaya Dasami, Vaikunda Ekadasi, Kavsika Dwadasi, Sivarathri Thrayodas: Naraka Chathurdasi, and A-ga-ma-vai Pournami.

Dipavali is a prominent festival in honour of Naraka-sura on chathurdasi. On that day an oil bath is taken in the latter half of the night before the break of day. It is probably a remnant of the old custom of oilbaths in the long sunless nights of the Arctic Home. But it literally means the row of lamps, and the row light is now set up on the fullmoonday of the month of Krittika. Bil Fires are lighted on midsummer night on the hills of Orkney in Scotland. In some parts of India lamps are lighted on Dipavali days. Such confusion is due to the change of Seasons due to the precession of equinoxes. Similarly, the month of Margasirsha was instituted as the season for early baths at the time of Sri Krishna. But now the early-bath-season in the river Kaveri in the month of Tula and the Tulakaveri Mahatuya is the outcome of the change. The first institution of the bath in the month of Margasirsha was 4000 years before the subsequent change.

The week of seven days was founded on the attempt to measure time by the four phases of the lunar month. The seven moving bodies revolved in settled courses while the stars appear to be fixed. The order of the magnitudes of their orbits is Saturn, Jupiter, Mars, Sun, (i. e. really the earth), Venus, Mercury, and the Moon. The planet which presided over the first hour of the day was thought

to preside over the whole of that day. If Saturn ruled the first hour, he would rule the 22nd hour; and if we refer to the above list, we shall find that the Sun would rule the first hour of the succeeding day, then in succession the Moon, Mars, Mercury, Jupiter and Venus, round to Saturn again, in the precise order of our days of the week. "This order is so artificial that it cannot have been invented separately, and wherever we find it we may feel certain that it has descended from the astrological fancies of Akkadian priestly astonomers at least 6000 years ago.—" Laing's Human Origins, p. 60. The Akkadians must have learnt it from the Indo-Aryans. Sargon I is supposed to have lived about 3800 B. C., but there are reasons to suppose that our Mahabharata was anterior to his reign. The account of the birth of Sargon I is exactly similar to that of Karna. Therefore who borrowed and from whom cannot be a matter of very great doubt.

There are some stray mentions of yuga and other facts which may be discussed with some advantage. Muchukunda speaks of prophecy by Vriddha Gargya, the priest of the Yadavas, of the birth of Sri Krishna at the end of Dwapara yuga, 28 yugas before Krishna's birth. V. P V. 23, 27. This shows that reckoning was kept of the several chatur yugas passed from the beginning of the Aryan Era. It is said that the Vedanga Jyotisha states that the first year of the yuga commenced at the winter solstice with the Sun and Moon at the beginning of Danishta. The Sun and the Moon are usually in conjunction in Danishta in the month of Magha. If the winter solstice was in Magha, it ought to have been (2150+1500) or 3650 years ago. The winter solstice is now in Pushya. The Vedanga Jyotisha must have been corrected to the actual state of the planets from time to time, and the last correction was made 3650 years ago. This agrees with some other phenomena that we found described elsewhere. But if it were the equinox that occurred with the newmoon at Danishta, as the equinox is now in Aswini (according to

the popular notion) it would have occurred (2150×10+1500) or 23000 years ago. The Hindu Panchangam mentioned Magha new moon as the beginning of Dwapara Yuga.

Bhishma waited for the Uttarayana to come in for giving up his ghost, and when it did arrive he is made to say माघोऽयं समनुप्राप्तः Anu. P. ch. 167 v. 28. Bhishma lay on his Saratalpa for 58 days. The uttarayana now begins with the month of Thai. If it were Magha at the time of Bhishma, it must be 3600 years ago. But we have reason to say that the Mahabharata is older, and therefore the verses must have been altered from time to time so as to suit the present conditions.

It may not be out of place to discuss here a verse of the Bhagavad Gita which talk of the four Manus. ch. 10 v. 6. Vedanta Desika properly raises the question that there ought to be 14 Manus for each day of Bramha. The 4 Manus descended from Priyavrata are called by that name jointly. But Sankara and Ramanuja explain that phrase as referring to Brahmasavarni etc. This is not proper. The Gita talks of the Manus who lived in the past; but the Savarnis are the 9th to the 12th Manus that are going to come after Vaivasvata, the present Manu. V. P. III. 2, 29—32. Ananda Tritha takes this objection, but he does not refer to the verse of the Vishnu Purana and suggestes Swayambava and the next three Manus as referred to here.

The ancient Indo-Aryans are thus seen to have studied theoretical and practical astronomy most systematically. They had their text books and their observations long, long before the other nations that have lived and died out in this world. May their descendants remember their deeds and proclaim them only. For by not acknowledging their debt to them, they are bound to go down.

गुरुं प्रकाशयेद्धीमान् मंत्रं यत्नेन गोपयेत् ।
अप्रकाशप्रकाशाभ्यां क्षीयेते संपदायुषी ॥

SCIENCE JOTTINGS,

BY

(A CHEMICO).

Research, like virtue, exalteth a nation. Its importance has been recognised all over the civilised world and the late European war has been an eye-opener. We have always been thinking that England has been in the vanguard of progress in science and research. And yet we find that, at the Anniversary Dinner of this year of the Chemical Society, Sir Alfred Mond, Bart, M. P. First Commissioner of works, has spoken as follows:—"A short time ago ti was my misfortune, as part of my duty, to introduce some estimates in the House of Commons and the subject which caused, I think, most discussion and brought most criticism on my devoted head, was the fact that we were spending a few hundred pounds for a t st Laboratory. "As though anybody now requires research," they said; "as though in these days of financial stringency and squandermania it was necessary to provide buildings in which research could be carried on!" "Who wanted research into the behaviour of concrete or the effect of moisture on building materials?" I was told, "Why not send for a practical builder who will put you up a house and will not require research?" I did my best, as I was in duty bound, having been trained in science and having profited by research in many ways, to defend, I hope successfully, the importance of research, the necessity of research and the economy of research in these days. One would hope that people would have learned by this time what science meant to this country, to this empire and to the world." India is a part of "this Empire" and we shall request our readers to imagine what our position in affairs in science and research is in India, and in Madras in particular.

* * * * *

At the public meeting held in connection with our College Old Boy's Day celebrations this year, the President

referred to the bankrupt condition of the whole of Europe in appealing terms. It cannot be otherwise. It was so in the times after the Napoleonic war, perhaps worse. Sir A. Mond, in the speech referred to above, says, "The key to the recovery of Europe lies, not in financial jugglery in extracting money which does not exist and from people who have not got it; it does not even lie in reducing the wages of workmen; it lies in some great improvement in our methods of production, some great discovery as fundamental and far-reaching as that of the steam engine in its epoch, to enable us to recruit that capital which has been destroyed in the last five years". Hence he says that "sheer necessity and self-defence for the continuation of civilisation demand that we should strive for more research and for more expenditure on research." We were given to a sense of keen disappointment when we had occasion to read the animadversions of some of the M. L. C.'s in their budget debate on the grant alloted for the Agricultural College and Research Institute at Coimbatore. The poverty of India can be reduced to a minimum, only when the people, more than the Government, pay greater attention to the improvement in agriculture—a better production and a better organisation in the distribution, and the utilisation, of it.

* * * * *

It appears that Sir Alfred Mond "was able, through the courtesy of a friend, to see the agenda of a meeting which the German Steel and Iron Institution held during the war". He says, "They were laying out a long programme of research work on blast furnaces, pig-iron, and coke and a whole series of carefully conceived experiments was conducted in the middle of the war. I felt that this rigorous belief, in times of great distress, in the necessity for scientific progress was a greater menace to our country than all the Hindenburgs, Ludendroffs and Tirpitzes Germany could produce." The Scientists of the allied

countries did not lag behind. They put their heads together to meet the offensive science of Germany with success. The efforts of these should all the more be greater now in times of armed peace—so that we may "be prepared" as a scout and make up for all that has been lost.

* * * * *

Yet, another certificate from Australia—The president of section B of the Australian Association for the advancement of Science, 1921, Prof. N. T. M. Wilsmore, has said, "Prior to the war, the status of science and scientists in the estimation of the Government and people of Britain, and of Australia (*why not of India also?*) compared most unfavourably with that accorded to them on the continent of Europe or the U. S. of America; and in spite of the drastic lessons of the war, it is still far from satisfactory. It has been well-said that the work of men of science like James Watt or Dalton or Faraday has done more to shape our modern social and economic life than any statesman or so-called "Social Reformer" —dare one, in this free country, even with bated breath, add "or Labour Leader"? who ever lived. Yet there is too much reason to doubt whether so much as five per cent of the elected representatives of the people in Britain or Australia (*what shall we say of India?*) could give an intelligent answer if they were asked who Dalton or Faraday (*or Gajjar or Bose or Ray*) was or what he did.

* * * * *

We draw the earnest, sincere and careful attention of our student population—the citizens of to-morrow—to the following paragraph in the Australian Address:—"As Mr. H. G. Wells in his "Outline History of the World" so forcibly and clearly points out, the present cultural ascendency of the European peoples does not necessarily prove their racial superiority over the peoples of Asia [*How many of our students have known Mr. Wells' work?*]. This ascendency dates back only some four hundred years,

and is due primarily to the command over the forces of Nature, achieved relatively by a small number of devoted men of science. There is good reason to believe that amongst the Asiatic peoples, men not inferior in ability may be found who, given suitable environment, might produce similar results. Already the Asiatic peoples are beginning to realise this possibility; and when their awakening is complete, the ascendency of the European peoples may disappear as quickly as it arose. The progress made by Japan alone in one generation shows that our comfortable belief in the fundamental superiority of the European may be a dangerous delusion and that any weakening in the pursuit of knowledge means risk of losing our present lead, possibly for ever."

* * * * *

A nice present for a scientist! The women of the U. S. of America have presented one gram of radium (!) to Madame Curie of France—that patient researcher in the chemistry of radium and its congeners. Madame Curie went all the way from France to America to receive it. It has cost the American women a sum of more than ten thousand pounds sterling and they could not have done a nobler deed. At the rate mentioned above, one lb. of Radium will cost 45 lakhs of pounds sterling (nearly $6\frac{3}{4}$ crores of Rupees) but fortunately the small amount of only one gram is said to have been separated and collected together in the whole world.

* * * * *

The Polish lady scientist of France went to America to receive a present and we find a Parse Lady Student of India, M. M. Mehta, has gone to London for research work as a Government of India Scholar. She has served already at the Lady Hardinge Medical College, Delhi, as a lecturer in Physics and Chemistry. The writer well remembers how she led the chemistry section in reading her paper on "The perishing of paper" during the seventh Indian

Science congress. . May she advance in science and the progress of science!

* * * * *

G. O. 2046 d. 22—11—20, Industries, has a melancholy interest. The Tanjore Delta has been critically surveyed as regards its chemical and agricultural content by the Department of Agriculture. It is found to be defective in phosphates. And Dr. Warth has examined the deposit of phosphatic nodules in the Trichinopoly District as early as 1892 and has calculated that seven to eight millions of the phosphatic nodules will be found in 200 feet depth. These cover an extent of ten to fifteen square miles. Trichinopoly has Phosphates and Tanjore is in need of it. And yet the two have not met. There is many a slip betwixt the cup and the lip. The members of the Shiyali Agricultural Company have got a sorrowful tale to tell.

* * * * *

The Government cannot do everything. The people should move in the matter. Self-help is the best help and God helps only those who help themselves. Andrew Carnegie, the man who was the architect of his fortune, is said to have followed the motto "To die rich is to die disgraced." What an excellent motto for a rich man! Carnegie "gave away more than 100 crores mainly for working men's reading rooms and institutes." Will our rich men of Tanjore, all put together, give 100 ten-thousands for increasing the productivity of their own lands? A clever scientist of Tanjore should be selected to investigate the conditions and requirements of the district and then be deputed to go abroad to imbibe the method of work pursued there, and then be installed in a well-equipped Laboratory in Tanjore to devise methods for improving the lands and increasing the yields. Mr. T. V. Seshagiri Iyer, after inspecting the Agricultural Institute at Pusa, says it is inaccessible but, neverthless, deserves to be developed. He further says "There is no institution in

India which teaches Agricultural chemistry (*pace the Coimbatore and other Agricultural Colleges*). The Indian cultivator wants instruction on it very badly. Hence a class should be instituted for it in Pusa.'' *vide the Hindu dated 8—7—21*. We wonder if the Tamil Districts can be satisfactorily profited by it. We will recommend strongly one in the heart of the Tamil land and the interested Mirasdars can well afford to have it. The wise words of Sir P. C. Ray are pertinent in this connection, and we make no apology to quote them. He says " Research Institutes, such as we have got here at Pusa and elsewhere, are excellent things in their own way. You may wax eloquent over hybridisation and the adoption of improved strain of seed and the efficacy of fertilisers with their proper percentages of phosphates and nitrogen, and point out that the outturns of the crop may thereby be doubled; but the simple fundamental fact is coolly ignored that you have to deal with a ryot whose excessive sub-division of land and fragmentation of holdings, coupled with his ignorance, conservatism and narrow outlook, renders him incapable of profiting by Laboratory experiments. You might as well appeal to deaf ears." Exactly so. Hence we appeal to our Local Boards and Municipal Councils to spread education speedily among the masses and appeal to our mirasdars to lay the foundation for an excellent scientific edifice wherefrom will emanate discoveries useful to the people of the land. *Festinalente*.

"COLLEGE NOTES".

1. We offer our heartiest congratulations to our beloved Principal on his having been created a Rao Sahib.

* * * * *

2. It is a unique honour to our college that one of its distinguished old boys, the Hon. V. S. Sastri, represents India at the Empire Premiers' Conference.

We also offer our humble but hearty congratulations to him on his being recently presented with the 'Freedom of the City of London'—he being the first Indian to receive that high honour.

* * * * *

3. The College Old Boys' day was celebrated with great *eclat* on the 26th March. M. R. Ry. K. Ramanuja Chariar Avl., B. A., Principal, National College Trichinopoly and a distinguished old boy of the college presided on the occasion. A detailed account of the proceedings is published elsewhere.

* * * * *

4. The annual meeting of the College Stationery Society was held on the afternoon of the 18th when Messrs N. Raghavachariar, and K. C. Viraraghava Aiyar were 'at home' to the members. The function began at 2–30 P. M. with the serving of refreshments. Then the annual report ann the auditor's report were read and adopted. A series of interpellations *re* the working of the society during the year under review were put and answered. A resolution proposing certain alterations in the constitution of the society moved by Mr. N. Raghavachariar was then passed by a majority. Mr. G. Krishnamachariar iv class, who has been an honorary worker of the Society ever since its inception was then elected unopposed as Secretary. The new constitution empowers him to form his own 'ministry of co-operation'. Accordingly the following have been nominated Messrs. P. S. Subramanian IV: S. Raghavachari III: and R. Radhakrishnan II.—Up-to-date Parliamentary lines!

5. One of the latest additions to our Athletic activities is the introduction of the American game of Basket Ball. Our students have taken very keenly to the game.

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6. The Principal is pleased to nominate the following persons as captains of the various Atheltic sections for the year 1921-22. S. Subramanian (Tennis) S. Jagadesan (sports) M. Padmanaba Pillai (Foot-ball). S. Mahadevan (Canoe) R. Krishna Rao (Hockey). D. Balaraman (Basket ball) S. Gopalan (Badminton) T. V. Swaminathan (Fives) K. Krishnaswami (Volunteer corps).

* * * * *

7. The following have been elected as the Members of the student's representative council, IV class—R. V. Krishnamachari and R. Krishna Rao. III class—N. Ramachandran and Rama Wariar. II class T. S. Gangadharan and C. L. Aravamudhan. I class. V. Rajagopalan and T. M. Veerayyan.

* * * * *

8. B. Venkataraman IV class has been elected Secretary of the Literary Society We hope that this year at least the students will be persuaded to read their essays as per programme without fail. There is no use of having a showy programme without fulfilling its items.

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9. The college transfers: During the last month there have been too many changes in the college staff. Messrs. M. V. Ramanujachariar and L. A. Ganapathi Iyer retired. Messrs A. V. Venkatarama Iyer, S. Muthukrishna Iyer, D. Samuel have all been transfered. These gentlemen have been helpful to us in one way or the other and we heartily thank them for their service.

We heartily welcome the new members of the staff—Messrs A. M. Sadagopa Ramanujachariar *Tamil Pandit*, P. Narasimha Pantulu Garu *Lecturer in Philosophy*, R. Rama Aiyar *Assistant Lecturer in History*, S. A. Mani Aiyar *Asst., Lecturer in Mathematics*, D. A Narasimha Pantulu Garu *Additional Lecturer in English.*

10. In honour of the retirement of Mr. L. A. Ganapathi Ayar, a football match was played between the college eleven and the Town team. The match ended in a victory for the college, the college scoring one goal against its opponent.

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11. Speaking recently at Sunderland on commercialism and co-operation. Mr. George Bernard Shaw is reported to have said: "The man who bought goods at a profiteer's shop, when he could go to a co-operative shop, was an idiot, and ought not to be trusted with money. That was why many men's, wives did not trust their husbands with their money" [From the Madras Bulletin of co-operation.] We draw the attention of our readers to this remark.

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12. On the 27th of July Mr. V. Masilamani M.A., F.G.S., of Travancore gave a very illuminating lecture to our students on "Science and its utility". The Principal presided on the occasion.

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13. We are indebted to one of our College Lecturers for the followings as "Thoughts for our magazine".

(*a*) True sympathy must be active or it is not sympathy at all.

(*b*) To judge rightly we must love largely.

(*c*) The ink of the thinker is equally valuable with the blood of the martyr.

(*d*) Virtue and noble deeds are better than high descent.

(*c*) Not the studies but the study makes the scholar.

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14. The college volunteer corps formed last year in connection with the Mahamakham festival has been reorganised and made a permanent feature of our extra collegiate activities. The object of the Principal in doing

this is to afford greater facilities for the display of the fine spirit of social service that is inherent in us. As we have remarked in the Editorial 'our instinct for Social Service, our impulse to help our fellowmen must not be spasmodic. It must be rendered systematic and must become a second nature with us'. Students are therefore requested to form themselves into batches of eight persons, with a leader at the head of each batch, and give their names to the general captain of the Volunteer corps. In this connection we are glad to announce that our Principal has been appointed by the authorities as the chief scout commissioner of this District.

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15. Arrangements have been made by the authorities of the College Stationery Society for the imparting of instruction in elementary book keeping for the benefit of the members of the society. We are much indebted to Mr. N. Raghavachariar for his having undertaken to do this difficult but useful task.

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16. We are given to understand that steps are being taken for the addition of wood-craft to the the activities of the Hostel Labour Union. We wish the Union all success and hope erelong it will develop into a big organisation by extending its activities in all possible directions.

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17. Reviews:—We acknowledge with thanks the receipt of the following Magazines in exchange for our Journal:—*The Mysore University Magazine*, *The Central Hindu College Magazine*, *The St. Joseph's College Magazine* The first number of the *Magazine of the Govt. College Mangalore*, and the April, May, June, July, August issues of the *Every man's Review*.

[K.]

THE OLD BOYS' DAY.

The 7th Old Boys' Day was celebrated in the college premises on Saturday the 26th March. In the morning there was a business meeting when certain rules were altered and passed and office bearers for the present year elected. At noon there was a dinner when almost all the local members and a few from the mofussil were present. In the afternoon after lunch, a tennis match was played between the old boys and the present boys. The old boys represented by Messrs A. Rengasami and V. Gopalan were the winners and the cup presented by M. R. Ry. Thiruvengadam Pillai was awarded to them.

At 5 P. M the regular meeting began. The Principal in his opening remarks welcomed the old boys reviewed the working of the college, referred to the calm that prevailed in the college in spite of the N.C.O. movement and concluded by appealing to the old boys to co-operate with him as much as possible in the smooth working of the college. Then the presentation of Rao Bahadur A. Rengasami Ayyangar's medals for popularity took place. Rao Bahadur N. Krishnasami Ayyangar's medal for the best English Essay, was then announced. The several "toasts" were then proposed and suitably responded to. The President-elect of the day M. R. Ry. K Ramanujachariar Avl., B A., Principal, National College, Trichinopoly rose amidst loud cheers and after reviewing his career as an old boy of the college and narrating amusing recollections of his days, delivered a very interesting and instructive address which lasted over an hour. The following is a summary of his speech:

He began by saying that he was not going to express any opinion, either for or against, the movement of non-co-operation, even though it was being carried out throughout the length and breadth of the land and was being influentially supported by several prominent leaders of the country for whom he had nothing but the greatest respect and admiration. However, he would refer but one item in the non-co-operation programme, *viz.*, the subject of educational boycott, which had been condemned by Principal Rajagopala Ayyar in his speech that evening. The desire on the part of some people to give up existing educational institutions, he said, indicated that there was considerable dissatisfaction in their mind as regards the kind and method of instruction that was being imparted in the schools as we had them.

In the first place, to be educated through the medium of a foreign tongue was most unnatural, as it sapped the intellectual energy of the pupils receiving instruction, and as it forced the pupils to think in the foreign language, which meant so much intellectual waste. In his opinion, education, at least up to the end of the secondary school course, should be through the vernacular; and even in the higher stages where the use of a foreign language may be permitted, he was against insisting on too much attention being paid to the strict grammer, the accurate idiom and all the finer technique of that foreign tongue.

Another defect he would like to point out with regard to our present schools and colleges was that the instruction imparted in them lacked the elements of a practically useful education. He pleaded for the opening of a large number of technical, industrial and agricultural schools and for the inclusion among other things of the elements of a vocational education in the curricula of studies of our secondary schools.

In this connection he referred to the great economic crisis through which most European countries and the world in general were passing as a result of the late great war. India was no exception to the rule and we had our own exchange troubles and other economic difficulties. Food and raiment were scarce and starvation was everywhere staring in the face. Economic and industrial activity was the only remedy for the ills from which the world was to be saved. Illustrating his meaning be explained how a weaver who wove cloth, or a spinner who spun yarn, or a farmer who cultivated a plot of ground, was creating wealth and made two ears of corn grow where one grew before, thus adding to the world's existing stock and was therefore a greater national asset that a lawyer with a very lucrative practice or the very highest judge in the land, both of whom, however much they may earn, had bu direct share whatever in the creation of new wealth not simply helped to transfer existing wealth without adding to it. In conclusion, he said signs were not wanting to show that the defects pointed out above were receiving the attention they deserved from those concerned, and he hoped the time would not be far off when the country would have a large number of industrial, technical and agricultural schools to supplement the existing ones.

Mr. GANAPATI AYYAR'S RETIREMENT.

On Sunday the 24th July, a farewell entertainment was given to our revered and beloved Professor of Philosophy M. R. Ry. L. A. Ganapati Ayyar, on the eve of his retirement after 37 years of meritorious service. After light refreshments the proceedings began with a prayer by Mr. K. Ramachandran IV class. Then an address *(published elsewhere)* artistically printed on yellow satin was read and presented to him by Mr. K. Krishnasami, Secretary of the G. M. Committee. Mr. C. A. Venkatarama Sastri B. A., an old student of Mr. Ganapati Ayyar made a speech recounting his experiences as a student of Mr. Ayyar and concluded by wishing him long life, mental peace and happiness. Messrs K. Padmanaba Menon IV class and N. Ramachandran III class then followed, referring to the great esteem and affection in which the professor was held by one and all of the students of the College. The Principal who presided on the occasion then spoke on the work of Mr. Ganapati Ayyar as an educationist and concluded by holding him up as an example of conscientious and untiring work as a professor. Then Mr. Ganapati Ayyar rose amidst loud cheers and gave his reply in which he mentioned some reminiscences of his varied career, as a teacher and as a Sub-Assistant Inspector of Schools, exciting great laughter in the audience. He concluded by giving an inspiring and pathetic appeal to excuse his foibles and remember him for ever. After a vote of thanks to the President, the guest of the evening and others present, by the secretary the proceedings came to a close.

The Treasurer sends the following financial statement:-

	Rs. As Ps.
Subscriptions and Donations received from present students upto 1st August	47— 0—0
Expenses towards Social Gathering on the Farewell entertainment day	33—12—0
Balance added to the Bromide Enlargement Fund.	13— 4—0

The committee appeals to all those who have promised but not paid their subscriptions to pay it at a very early date and to those who have not subscribed to contribute liberally.

K. ARAVAMUTHAN,
Treasurer. (G. M. Committee.)

To

M. R. Ry. L. A. Ganapathy Aiyar.

Beloved Guru,

It is with feelings of deep regret that we, your chelas, bid farewell to you. We have sat at your feet all these years to drink deep of the fountain of philosophic knowledge and it is needless to point out that you have not only quenched our thirst but increased our appetite. Acute problems of philosophy were presented to us in a homely manner which could not but impress even the dullest of us.

More than the qualities of your head, the affections of your heart have endeared you most to us. You were in a very real sense *in loco parantis* for us. We can never forget your sweet similing face and the affectionate queries that you were constantly putting to every one of us as you were walking up and down the verandah. It will be sheer ingratitude on our part if we do not refer to the active sympathy you have been showing in the cause of the students. A Ramasamy or a Krishnasamy gets into a scrape and he finds a ready helping hand in Mr. Ganapathy Iyer.

Above all, your intense love of truth, the candour with which you exposed injustice, the conscientiousness and thoroughness with which you discharged your duties, your simple habits and more than anything else, your love of students have made us indebted to you for ever. We humbly pray to God that you may be given a sound health and long life to enjoy your well earned rest. We have every hope that you will always cherish a warm corner in your heart for us,

Your devoted,

Students of the Kumbakonam College.

24th July 1921.

The Report of The Kumbakonam College STUDENTS' STATIONERY SOCIETY,

for the period ending 31st January 1921.

MEMBERS OF THE MANAGING COMMITTEE.

M. R. Ry. Rao Sahib P. Rajagopala Aiyar M.A., I.E.S., President.

,, T. K. Hanumantha Rao B.A.,
,, K. S. Patrachariar M.A,
Mr. C. L. Ramasami, Secretary.
,, N. K. Vijayaragavan
,, C. Sankaran Nair
,, T. G. Seshadri
,, T. Krishnaswami } Auditors.
,, G. Krishnamachary }

To The Members of The Kumbakonam College Students' Stationery Society.

The members of the Managing Committee have great pleasure in submitting the report for the period between 9th January 1920 and 31st January 1921. The period under report began with 90 members on its rolls 76 members were newly admitted and 8 withdrew during the course of the period, so that the membership now stands at 158. Excluding these there are 46 members who have only paid entrance fees.

The period commenced its business with a sum of Rs. 176-11-2 being the total amount of members' advance including the dividend and the interest accrued during the previous period to members and added to their advance account. A sum of Rs. 14—15—9 was withdrawn during the year by the outgoing members thus leaving a balance of Rs. 161-11-5 towards the advance account.

During the last period the Reserve Fund amounted to Rs. 58—11—10. A sum of Rs 31—6—1 was set apart as common good fund out of which the society has spent Rs. 28-15-0 in the shape of subscriptions for Co-operative News, Bulletin of Co-operation etc. As a part of propaganda work, Mr. N. Raghavachariar M.A., L.T., under the auspices of the society delivered a lecture and made a practical suggestion to add a clothing department to our society's activities. The committee hope that they would be able to install it this year.

During the year there were 4 general body meetings and 3 committee meetings.

Members will be glad to learn that our stationery business has progressed to such an extent as to justify the keeping of separte accounts for the same as suggested by the auditors.

The accounts of the society have been audited, by Messrs. T. Krishnaswami and G. Krishnamachary of whom we are proud to mention that the former is the holder of a diploma in commerce. Their report and Financial Statements are appended. The hearty thanks of the society are due to them.

As will be seen from the statement of the auditors the net profit of the society during the year under report is Rs. 266—6—4 which the Managing Committee propose to distribute as follows:—

(a) A sum of Rs. 5—6—6 be set apart as interest due to the Members on their advance.

(b) 25 per cent of the remainder which comes to Rs.65—4—0 be set a part for Reserve Fund.

(c) A dividend of 9 pies per Re of perchace be distributed which will absorb about Rs. 145-12-6.

(d) The balance which amounts to about Rs 49-15-4 be set apart for common good fund.

In conclusion we are thankful to all the members for the indulgence with which they treated the Secretary and his colleagues. It would not be out of place here to express our gratitude to Messrs. R. Rathakrishnan and K. R. Chinnappa Pillai for the very ungrudging help they have given to the Secretary all through the year.

We wish to conclude, the report with an earnest appeal to all the students of the college to avail themselves of the benefits of this small co-operative enterprise in this college.

We beg to remain,
Yours Sincerely,
C. L. RAMASWAMI,
Secretary,
(for the Members of the Committee.)

INTERMEDIATE EXAMINATION IN ARTS 1921.

FIRST CLASS.

GROUP I.

831 C. R. Veeraraghavan
835 T. S. Venkataraman

GROUP III.

3527 Y. Visvanathan
3523 R. Varadhachari
3519 S. Raghavachari

SECOND CLASS.

GROUP I.

795 S. Balaraman
796 R. Jaganathan
814 S. Vedantam
819 P. Ganesan
821 R. Kannan
822 V. Mahadevan
825 S. G. Ramachandran

PRIVATE STUDY.

858 N. Ramachandran
865 K. Srinivasaraghavan
869 T. V. Subramaniyam
872 V. Sundaresan
879 K. Raghavan
882 N. Theyagarajan

GROUP III.

3184 L. A. Mahadavan
3491 V. A. Srinivasan
3515 S. Nageswaran
3626 K. S. Venkataraman
3528 S. Rajagopalan

PRIVATE STUDY.

3600 K. R. Srinivasan
3605 P. Rajagopalan
3606 K. S. Raja Ram
3609 A. Srinivasa Chari

PART I.

797 N. V. Kalyanasundram
820 P. S. Gopalan

PART II.

GROUP I.

801 R. Rathakrishnan
805 K. Rajagopan
826 S. K. Ramamurti
829 S. R. Thyagarajan
208 R. Srinivasa Rao
(*Private Study.*)

GROUP III.

3485 V. Naganarayanan
3486 P. Rathakrishnan
3487 V. Rathakrishnan
3490 V. Srinivasan
3493 R. Subramaniyan
3496 R. Suriyanarayanan
3500 R. Panchapakesan
3504 S. Mahadevan
3405 G. Ramachandran
3407 S. Ramamurti
3508 S. Ratnasabapathy
3510 K. R. Sarangapani
3512 P. Subramaniyan
3513 K. G. Krishnasamy
3516 T. R. Narayanaswamy
3517 N. Natarajan
3518 K. Rathakrishnan
3520 V. Ramanathan
3521 K. S. Rengaswamy
3522 K. S. Srinivasan
3524 A. N. Venkataraman

PRIVATE STUDY.

2888 V. Subramaniyam

B. A. DEGREE EXAMINATION 1921.

PART I. ENG. LANG. and LIT.

564 R. Hari Rao
565 S. Paramasivan
568 A. S. Venkataraman
569 P. Visvanathan

1323 P. Balakrishnan
1324 A. Gopalakrishnan
1329 K. V. Guruswami
1331 C. Kailasam
1332 V. Kalyanam
1334 A. Kothandaraman
1335 N. R. Krishna Iyer
1337 K. S Krishnamurthi
1341 V. Krishnaswami
1343 M. Lakshmanan
1346 S. V. Mahadevan
1348 Ghaly Narayana
1349 N. Narayana Menon
1350 V. S. Narayanaswami
1358 S. S Rajagopalan
1359 V. Rajalingam
1361 R. Ramachandran
1362 S. Ramachandran
1363 S. Ramamurthi
1364 K. Ramanathan
1371 S. Ramaswami
1374 S. Sambasivan
1375 R. Sankaran
1376 K. Sankara Narayanan
1378 P. S. Sitaraman
1384 P. R. Srinivasan
1387 T. R. Srinivasan
1392 P. P. Subbarama Iyer
1393 M. Subbiah
1394 P. Subbuswami
1395 A. V. Subrahmania Iyer
1396 C. N. Subrahmanian
1397 K. Subrahmanian
1404 P. S Subrahmanian
1405 S. Subrahmanian
1406 T. S. Subrahmanian
1408 G. Sundararajan
1410 T. S. Sundaresan
1413 M. Vaidyanathaswami
1418 V.S.Vijayaraghavachari

PART II.

GROUP I. (MATHEMATICS.)

1321 N. S. Aravamuthan
1341 V. Krishnaswami
1346 S. V. Mahadevan
1348 Ghaly Narayana
1353 N. Raghavan
1355 S. N. Rajagopala Iyer
1358 S. S. Rajagopal
1384 P. R. Srinivasan
1402 N. Subrahmaniyan

GROUP II *a* (PHYSICS)

1335 N. R. Krishna Iyer
1338 R. Krishnamurthy
1370 R. Ramaswami
1374 S. Sambasivan
1376 K. Sankara Narayanan
1377 C. Sankaran Nayar
1395 A.V. Subrahmania Iyer

GROUP IV (PHILOSOPHY)

565 S. Paramasivan
568 A. S. Venkataranam
1328 P. Balakrishnan
1329 K. V. Guruswami
1331 C. Kailasam
1332 V. Kalyanam
1387 T. R. Srinivasan
1401 N. Subrahmanian
1413 M. Vaidianathaswami
1432 K. Narayanaswami } P.
1547 V. Krishnamurthi } S

GROUP V

(HISTORX & ECONOMICS.)

1324 A. Gopala Krishnan
1339 A. Krishnan
1362 S. Ramachandran
1367 K. V. Ramasubbu
1385 T. K. Srinivasan
1404 P. S. Subrahmanian
1406 T. S. Subrahmanian
1418 V.S.Vijayaraghavachari
1481 S. Ramanujam P. S.

GROUP VI. LANGUAGES.

1380 S.Somasundram (Tamil)
1388 V.Srinivasan (Sanskrit)
1397 K. Subramanian (Do)

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